

SUPPLEMENT.

BY AUTHORITY.



LEPROSY IN HAWAII.

EXTRACTS FROM REPORTS

*Of Presidents of the Board of Health,
Government Physicians and Others,
And from Official Records,*

IN REGARD TO LEPROSY BEFORE AND AFTER THE PASSAGE OF THE
"ACT TO PREVENT THE SPREAD OF LEPROSY,"

APPROVED JANUARY 3RD, 1865.

Hawaiian Islands, Board of Health

The Laws and Regulations in Regard to Leprosy
in the Hawaiian Kingdom.

HONOLULU, H. I., 1886.

SUPPLEMENT

TO THE

REPORT OF THE PRESIDENT OF THE BOARD OF HEALTH.

The following extracts from the records and reports of the Board of Health, since its organization, with the several statements of Government physicians and others, in regard to leprosy, are presented as a supplement to the Report of the President of the Board, and the Reports appearing in the Appendix thereto.

ORGANIZATION OF THE BOARD OF HEALTH.

A Board of Health was first organized in this Kingdom on December 13, 1850, by the following Order of King Kamehameha III:

BE IT KNOWN to all to whom it may concern, that, We, by and with the advice of Our Privy Council, hereby empower and authorize Dr. T. C. B. Rooke, Dr. George A. Lathrop, Benjamin F. Hardy, G. W. Hunter, C. Hoffman, M. D., Richard Hill Smyth, and W. Newcomb, to act as a Board of Health (four of them to be a quorum) for the good of the inhabitants of

Honolulu, and We hereby request and authorize them to communicate, respecting the same, with the Governor of Our Island of Oahu, and to point out to him, everything that in their opinion ought to be done or undone, removed or procured, for the preservation and cure of contagious, epidemic and other diseases, and more especially of Cholera, as may have occurred to each of them, on the day preceding.

Our Minister of the Interior is charged with the execution of this Our Order.

Done in Our Privy Council
this 13th day of December, 1850.

KAMEHAMEHA.

KEONI ANA.

REPORT OF DR. W. HILLEBRAND, SURGEON TO THE
QUEEN'S HOSPITAL, APRIL, 1863.

"Although it may not appear quite in place, I will here avail myself of the opportunity to bring to your and the public's attention a subject of great importance. I mean the rapid spread of that new disease, called by the natives "Mai Pake." It is the genuine Oriental leprosy, as has become evident to me from the numerous cases which have presented themselves at the Hospital. Repeated investigations leave but little doubt in my mind about the contagious character of the disease, as I have followed its gradual spreading from a single person to many people in the same village. The contagious property does not seem to be strongly developed, but is sufficiently marked to warrant the application of some radical sanitary measure. For some time during the last year, I have devoted the wooden house which served as a temporary hospital before the

erection of the present building, to the reception of this class of patients. In some of them medical treatment has produced a sensible amelioration. It will be the duty of the next Legislature to devise and carry out some efficient, and at the same time, humane measure, by which the isolation of those affected with this disease can be accomplished.”

EXTRACTS FROM THE RECORDS OF THE BOARD OF HEALTH.

HONOLULU, Dec. 28, 1863.

* * The Board of Health discussed other matters of importance to the health of the people in general, among them the *Mai Pake* as threatening to become more general, on which Dr. Hillebrand offered to report on some future time. The members of the Board* expressed themselves as desirous to meet the King's† wish in making the actions of the Board as useful and effective as possible.

HONOLULU, Feb. 10, 1864.

The *Mai Pake* was next discussed. The President having been acquainted with several cases of this disease on this island, and learning that the same was also spreading at the other islands, thought it wise that the Board should at once take the matter in hand and adopt measures to check as much as possible the spreading of this dreadful disease.

On suggestion of Dr. Hillebrand that all persons afflicted should be called together in order to be examined, etc., it was

* The Minister of the Interior, Geo. Morrison Robertson, W. Hillebrand, M. D.; Theod. C. Heuck, (Sec'y); and A. M. Kahalewai.

† Kamehameha V, then recently Minister of the Interior and President of the Board of Health.

Resolved, that, Mr. Jourdan be directed to take a census of those afflicted with the *Mai Pake* in and around Honolulu for the purpose of afterwards seeing them examined by the medical members of the Board to settle the question of hereditability, contagion, first origin of the disease and similar causes, and to report such census, desired to be as complete as possible, to the President of the Board. Which resolution was carried.

HONOLULU, May 25, 1864.

The *Mai Pake* was again discussed at some length; the Board regretted that this matter was as yet little explained, the reports on this subject from the other islands being very unreliable, and Mr. Jourdan was urged to report his census without delay so that Dr. Hillebrand might commence his investigation.

CHINESE LEPROSY.

By the letter of our Hawaii correspondent it appears that this terrible disease has commenced its slow but certain progress on that island. Is it not a shame that no steps have been taken to arrest this scourge in its incipency, which may yet prove more fatal and far more intolerable in its suffering than the small-pox. The last Legislature provided ways and means for the Government to act in establishing a sanitary commission, alas, Government seems to care little for the salvation of its poor dying out population.—*P. C. Advertiser*, May 21, 1864.

The letter referred to was dated Kona, Hawaii, May 12, 1864, and said:

“One year ago there was but one case of *Mai Pake* in

this district, and that poor native is now in a state shocking to humanity, still no measures have been taken for his removal from amongst the people, but on the contrary, hundreds of natives have been compelled to go or send to the very house he lives in to pay their taxes! And now, within a distance of five miles from that house cases of this incurable disease may be counted by the dozen, who are left to mingle with and spread still further its deadly ravages amongst our population!

“This surely, Mr. Editor, is a state of things which calls loudly for immediate steps to be taken to prevent the further spread of this disease from contagion, by having all the diseased cases collected and strictly kept apart in buildings for that purpose, there to be treated by the skillful hand of the physician. * * *

“We have the high authority of Dr. Hillebrand that the *Mai Pake* is the real leprosy; that it is now in our midst and attacking the best of our population is evident to those who go amongst the people; and as it is highly contagious, the foreigners no less than the natives are alike subject to its deadly and incurable attacks. This is, I think, a subject that vitally affects us all, and exertions should be made by all classes to have preventive measures at once adopted.”

HONOLULU, Aug. 10, 1864.

The subject of leprosy (*Mai Pake*) was brought up before the Board, and its spread among the people reported. Dr. Hillebrand expressed his opinion that the disease is spreading. Since it was last considered in this Board, he had convinced himself that of the several new cases which had come to his notice, all were taken by contagion. The doctor was of opinion that isolation was the only course by which the spread of the disease could be arrested, and recommended some

valley as the most likely place to meet the necessity. A valley, too, which ought to be subdivided, so as to exclude the worst classes from the less virulent; he suggested that if Makiki valley could be procured, it was in his opinion the best adapted place, being within so reasonable a distance from town for the purposes required, and he had long since convinced himself that it was also the best spot in which to fix for an insane asylum, two objects which would not clash at all with each other. Makiki valley is well watered, and possesses many advantages. After discussing this subject more fully, the meeting adjourned.

AN ACT TO PREVENT THE SPREAD OF LEPROSY, 1865.

WHEREAS, the disease of Leprosy has spread to considerable extent among the people, and the spread thereof has excited well grounded alarms; and Whereas, further, some doubts have been expressed regarding the powers of the Board of Health in the premises, notwithstanding the 302nd Section of the Civil Code; and Whereas, in the opinion of the Assembly, the 302nd Section is properly applicable to the treatment of persons afflicted with leprosy. Yet for greater certainty, and for the sure protection of the people,

BE IT ENACTED, by the King and the Legislative Assembly of the Hawaiian Islands, in the Legislature of the Kingdom assembled:

SECTION 1. The Minister of the Interior, as President of the Board of Health, is hereby expressly authorized, with the approval of the said Board, to reserve and set apart any land or portion of land now owned by the Government, for a site or sites of an establishment or establishments to secure the isolation and seclusion of such leprous persons as in the opinion of the Board of Health or its agents, may, by being at large, cause the spread of leprosy.

SEC. 2. The Minister of the Interior, as President of the Board of Health, and acting with the approval of the said Board, may acquire for the purpose stated in the preceding section, by purchase or exchange, any piece or pieces, parcel or parcels of land, which may seem better adapted to the use of lepers, than any land owned by the Government.

SEC. 3. The Board of Health or its agents are authorized and empowered to cause to be confined, in some place or places for that purpose provided, all leprous patients who shall be deemed capable of spreading the disease of leprosy, and it shall be the duty of every police or District Justice, when properly applied to for that purpose by the Board of Health, or its authorized agents, to cause to be arrested and delivered to the Board of Health or its agents, any person alleged to be a leper, within the jurisdiction of such police or District Justice, and it shall be the duty of the Marshal of the Hawaiian Islands and his deputies, and of the police officers, to assist in securing the conveyance of any person so arrested to such place, as the Board of Health, or its agents may direct, in order that such person may be subjected to medical inspection, and thereafter to assist in removing such person to a place of treatment, or isolation, if so required by the agents of the Board of Health.

SEC. 4. The Board of Health is authorized to make such arrangements for the establishment of a Hospital, where leprous patients in the incipient stages may be treated in order to attempt a cure, and the said Board and its agents shall have full power to discharge all such patients as it shall deem cured, and to send to a place of isolation contemplated in Sections one and two of this Act, all such patients as shall be considered incurable or capable of spreading the disease of leprosy.

SEC. 5. The Board of Health or its agents may require from patients, such reasonable amount of labor as may be approved of by the attending physicians, and may further make and publish such rules and regula-

tions as by the said Board may be considered adapted to ameliorate the condition of lepers, which said rules and regulations shall be published and enforced as in the 284th and 285th Sections of the Civil Code provided.

SEC. 6. The property of all persons committed to the care of the Board of Health for the reasons above stated shall be liable for the expenses attending their confinement, and the Attorney-General shall institute suits for the recovery of the same when requested to do so by the President of the Board of Health.

SEC. 7. The Board of Health, while keeping an accurate and detailed account of all sums of money expended by them out of any appropriations which may be made by the Legislature, shall keep the amounts of sums expended for the leprosy, distinct from the general account. And the said Board shall report to the Legislature at each of its regular sessions, the said expenditures in detail, together with such information regarding the disease of leprosy, as well as the public health generally, as it may deem to be of interest to the public.

Approved this 3rd day of January, 1865.

KAMEHAMEHA, R.

The section referred to is as follows :

§ 302. When any person shall be infected with the small-pox, or other sickness dangerous to the public health, the Board of Health, or its Agent, may, for the safety of the inhabitants, remove such sick or infected person to a separate house, and provide him with nurses and other necessities which shall be at the charge of the person himself, his parents or master, if able ; otherwise at the charge of the Government.

HONOLULU, Jan. 31, 1865.

At this, the first meeting of the new Board,* the subject of leprosy was considered, the President submitting a report on the number of cases found on the principal islands.

It was suggested that in order to obtain a complete knowledge of the disease, its contagion, etc., etc., a suitable place for establishing a temporary leprosy hospital should be selected.

HONOLULU, Feb. 23, 1865.

The President stated that the Board of Emigration was making arrangements with Dr. W. Hillebrand, the latter to proceed on a voyage to China and the East Indies for the purpose of procuring laborers for these islands, and that the Doctor would also direct his attention to the Chinese Leprosy, the *Mai Pake*, spreading among this people; the knowledge resulting from such enquiries being of the greatest benefit for all, would hereafter best enable the Board to adopt measures to treat and check this evil, and as the means at the disposal of the Board of Emigration was but limited, said Board asked to be supported by the Board of Health by assisting towards defraying part of the expenses.

On motion it was resolved that this Board pay at the rate of one thousand dollars per annum for one year towards the expenses incurred by Dr. Hillebrand's mission to the East, which motion was unanimously carried, but at the next meeting of March 11th, the resolution was reconsidered, and a resolution unanimously adopted to pay \$1,000 towards the expenses of Dr. Hillebrand's mission to the Immigration Committee.

* President ex-officio, the Minister of the Interior, Chas. Gordon Hopkins, W. Hillebrand, M. D. : F. W. Hutchison, M. D. : W. P. Kamakau, T. C. Heuck.

* * * The Board then discussed the subject of Lunatic Asylum and Hospital for leprosy. Several sites for either of these establishments were suggested; among them for the leprosy hospital a lot in Palolo valley belonging to the estate of the late W. Webster.

THE "HAWAIIAN GAZETTE," FEB. 25, 1865.

"The action of the Hawaiian Government, on the subject of leprosy, is most commendable; and provided the Act recently passed by the Legislature for preventing the spread of this loathsome disease, be promptly and efficiently carried out, the result will no doubt be highly appreciated by both the native and foreign population of these islands. The writer of these lines, during a long residence in the East, and especially in China, had many opportunities of meeting with persons, and even communities, afflicted with this really awful malady; nor did he fail to collect all the information on the subject possible, under the circumstances. * * * * * We now come to what fell under the writer's own eyes, whilst residing in China. The Chinese believing the leprosy to be contagious, and having an unspeakable horror of it, act with the utmost inhumanity towards those afflicted with it. Parents consign their children, and children banish their parents, to walled villages seen outside of most Chinese cities, in Southern China. These dreadful places of misery, and even revolting vice, are so abhorrent to many Chinese that they frequently commit suicide to avoid entering those filthy dens. We have visited several of them, and have found that the first appearance of the disorder is a red spot, appearing sometimes on the legs, but usually in the face. This spreads to a round patch, or in irregular streaks. The skin seems thickened and stretched, and sometimes

smooth or shining. The lobes of the ear now become thickened, while the parts affected are all more or less numbed and insensible. As the disease advances, the hair and eyebrows fall off; the tendons of the hands and feet contract, distorting their appearance; and finally slow ulceration sets in, destroying the flesh and bones of the fingers and toes, leaving nothing but the stumps. Attention is particularly called to the fact, that the great distinguishing characteristic of leprosy is *invariable tendency to spread*, according to an extended observation in China. * * *

Sequestration from the healthy seems to be the only alternative in cases of this malady if we take the experience of both the Hebrews and Europeans, the Hindoos and the Chinese.

* * * The origin of leprosy is quite unknown. The Chinese medical men, some of whom have some skill, (in medicine alone) insist that two causes produce it, *i. e.*, hereditary transmission and sexual contact. From close observation, during five years, the writer is inclined to believe that it spontaneously arises, in many instances, from the peculiar idiosyncrasy, matured by heat, want of cleanliness, bad diet, or all these causes combined.

“The only remedies which seem to have any beneficial effect in the early stages of the disease are arsenic, salines, alteratives and acids. Lotions of corrosive sublimate in almond mixture, iodine and ointments of mercury, caustic potash, seems to affect the patches, but at only a very early stage; and not much even then, as external applications are not sufficient to eradicate a disease so deep seated, notwithstanding the fact that it properly comes within the head of cutaneous affections.

“In the treatment of leprosy, it should not be forgotten that it does not exist in cold climates, nor has it ever existed in such regions in so great a proportion, *per centum*, as in inter-tropical countries; hence, the position of the contemplated lazaretto ought undoubtedly to be in as cold a position as convenient. The information deducible from Chinese authorities may be

condensed (from a Chinese work on the subject), into the following statements :

“1st. It is affirmed by Chinese lepers and physicians that this disease is not *invariably* communicated from parents to children.

“2nd. That some married women (wives of lepers) often show no marks of the disease, though living in the leper communities. To this fact the writer has been an eye-witness.

“3rd. That it does not necessarily shorten life.

“4th. That it often dies out itself, in the third or fourth generation, yet such is not generally the case.

“5th. That a thorough leper is incurable.

“The above statements are given for what they are worth. The Chinese people are exceedingly observant ; and amongst the heaps of rubbish of which their medical books consist, some grains of real information may be found.

“The handsome means now in the hands of the Board of Health, for the alleviation of the Hawaiian lepers, speak much for the humanity of the Government ; but it is to be hoped that nothing on a large scale will be attempted at first. A small hospital for the sole reception of lepers, with the necessary appliances at command, will, undoubtedly, lead to some mode of beneficial treatment ; and curative measures may then, it is hoped, be discovered, producing vast blessings towards the afflicted. The writer has been induced to publish what he knew of the *Mai Pake*, in its own original home, China ; not with hope of settling the question, but of exciting public opinion, and drawing out what information may be available towards staying this veritable curse, and removing the cause of so much misery and distress. The worst form of the disease has not yet appeared amongst us, and now it is time for vigorous measures. May the Board of Health have the satisfaction of being able, soon, to apprise us of the success of their labors, and the cheerful co-operation of all classes, towards the extirpation of that ruthless destroyer—Chinese leprosy.

DR. D. BALDWIN, LAHAINA, MAUI, APRIL 15, 1865.

“It is true that several lepers have been cured by the medicine I administer. Five persons used this remedy in Lahaina; three of whom were thoroughly cured, and two I ceased to prescribe for, as they did not follow the directions given and resorted to medicines prepared by Hawaiian ‘kahunas.’ I also gave the same drug to a woman living at Koolau, Oahu, and have since heard that she is quite recovered.” * * * In regard to leprosy of long standing, I will give a case in point which was successfully treated here at Lahaina. It was that of a man, about fifty years of age, with the leprosy of fourteen years’ continuance; his face was swollen, gross, lumpy and glistening, the ears thickened, the legs, arms, toes and fingers swelled, so as to entirely disable him from work. I gave him one pill night and morning; for about three months and a half, he was careful as to his diet, and at the end of the time above-mentioned he was entirely recovered. He has now been well for a year, and without any return of the malady. * * *

All the foreign physicians on the Islands possess this medicine as well as myself, and they know well how to prepare it for use. The physicians of Honolulu have used it with success. Dr. Good, of London, says of it, “There is no medicine so efficacious and powerful as this for the cure of leprosy.” I consulted with the faculty of Honolulu regarding the disease, and Dr. Judd prepared me some medicine. Dr. Smith, of Koloa, has used it beneficially. Dr. Whetmore, of Hilo, recommended me to try it at Lahaina.

If the foreign doctors are so well prepared, whence this anxiety of leprosy amongst us? It is simply the ignorance of the natives; they desire to get well quickly, and run after every foolish thing called a “cure.” Numbers of “kahunas” are using all sorts of medicines for the leprosy, some of which are foreign and some

native. Some believe that *awa* will cure them, some have a great regard for "Pain-killer," some scarify themselves with pieces of glass, while others eat the flesh of cats for the same purpose.

In 1863, there were fifty cases of leprosy in Lahaina, ten of whom died within the same year. The disease had made no great progress on some when they died, and in my opinion they were killed by malpractice. In one case the "kahuna" was a blind man.

The country will be benefitted by the law recently passed, to provide hospitals for lepers, but they should not be sent from one island to another, lest the infection attach to the vessel carrying them. It would be better to build two hospitals on Hawaii, two on Maui, and one on Oahu. If this be done and proper care taken, I have no doubt that in five years the disease would be eradicated."

FROM DR. D. BALDWIN, LAHAINA, APRIL 20TH, 1865.

"We have a foul and dangerous disease among us, and must, therefore, not quiet the fears of the public beyond what the truth will bear. The native population are not too much alarmed. In this region the healthy are often seen mingling with the leprous, which thing ought not so to be. In some of the extracts (of my letter in the *Kuokoa*) which you made, I have expressed myself strongly in favor of the curability of our Hawaiian leprosy, because I wished to turn the attention of natives from their ignorant and dangerous practitioners to foreign physicians. By extracting the paragraphs which utter this opinion, and omitting others, you make me seem to speak more confidently of future success in curing this disease than I intended to do; and therefore, I wish to add a few remarks by way of explanation; and,

* 1. * * * The cases I was able to report are sufficient, I think, to encourage us to persevere in efforts to cure the frightful malady, and to banish it from the land. They should lead natives to look to those for help who alone can be supposed to have any means of combating so fearful a disease. They may be permanent cures, or the disease may break out more unmanageable than ever. Similar cures reported in other countries should encourage us.

* 2. While I write thus hopefully, I am aware that men of the highest medical talent have studied the disease of leprosy, and they have sought for remedies, and many of them have pronounced it utterly incurable. It is certainly not a little staggering to our hopes in this matter, that while eminent physicians have bestowed so much attention, for many hundred years, and while the very remedies I have now been using have been used for ages in Asia and elsewhere, still there is a widespread belief that leprosy is an incurable disease. But there are authorities on the other side. An English medical dictionary has the finest description I have ever met with of the leprosy of the middle ages, which spread over Europe. The author says, recent cases may be cured, those of long standing are not easily cured. An eminent French physician says he has seen a multitude of cases of this disease treated without a single failure to cure. There is no way of accounting for such opposite opinions of great men, only by supposing that they are speaking of different species of the disease. * * * *

"As your China correspondent well observes (Feb. 25), we have now only a mild form of leprosy. But, it will, doubtless, in time assume more terrible features. Indeed, we have already had, in this place, some horrible cases. The disease has been considered in all countries, contagious. It has been so in Lahaina, though it does not appear in a new subject till a long time after exposure to its infection; and we have the proof of it in several native families. We are beginning to have a crop of leprous young children."

HONOLULU, March 16, 1865.

Drs. Hutchison and Heuck then reported to the Board of Health on the lot in Palolo valley belonging to the estate of the late W. Webster; that they had visited the place and recommended it favorably to the Board for a temporary leprosy hospital, the lot is of ample size to commence operations for such an institution; that, if experience proves the locality of the place to be well suited for the purpose, no doubt more land adjoining it could be obtained, that there was an unfailing supply of water in the stream at the foot of the lot by which the lower part (about one-third of the extent of the whole could be irrigated for raising kalo and other vegetables, etc., etc.), and that other reasons in favor of this lot are:—the exclusion from populated districts; that but few natives lived in the valley; no houses near the spot where the little colony would be established, consequently no reasonable objection could be made to the selection of this place by the people in the valley.

The Board fully considered this matter, and, as it is advisable to select a place as soon as possible, even if it be only temporarily, to treat urgent cases, as also in order to obtain knowledge and experience in the treatment of this disease and the establishing of a system of rules and regulations to govern such hospital in the future when assisted by the information procured on this subject by Dr. Hillebrand in his mission to the East; the following resolution was unanimously carried, viz:

“That the President is authorized to purchase the lot in Palolo valley for the sum \$1,000.” * * *

HONOLULU, March 18, 1865.

The President reported that the lot in Palolo valley had been purchased and that the documents relating to such purchase were made out.

The Board again discussed preparations for the cure and possible cure of lepers, and considered a plan suggested by Mr. Heuck for establishing hospitals, dwellings, and other necessary requirements for a leprosy colony; the size of the dwellings were recommended to be rooms of 12 by 18 feet or the equivalent of such space intended to house three persons. Mr. Heuck was requested to draw up a plan in conformity with the views expressed by the Board, also to furnish estimates of the probable cost of these buildings and to report on it at the next meeting. * * * * *

HONOLULU, April 3, 1865.

The Board divided the \$30,000 appropriated for general purposes in the following way, viz :

For hospital, etc., etc., for lepers.....	\$15,000
“ Vaccinators and vaccinations	1,500
“ Coroners’ inquests	500
Sanitary purposes on Oahu	2,500
“ “ Hawaii	3,000
“ “ Maui	2,500
“ “ Kauai	1,000
Office expenses of the Board and incidentals, also as reserve fund for emergencies.....	4,000
	\$30,000

Mr. Heuck then reported on the plan for a settlement for lepers at Palolo valley and submitted a plan with explanations; the advantage of adopting a certain system would be that a part of it might be carried out at present, while afterwards, if answering, it would be so enlarged upon as to form a complete settlement for housing about 300 persons, ensuring easy and thorough supervision, admitting of division for each sex, as also of such separations as to

meet the requirements of different stages of the disease, without difficulty. On the plan a special section for severe cases was set apart, separating these from the general settlement, still rendering this section as easily controllable. The cost of this part was estimated at about \$6,500 to \$7,000. The section contains in an enclosure of 115 feet by 195 feet, 1 hospital building, 16x50 feet with separate yard, 1 luna's* house, 15x20 feet, 10 cottages of 12x15 feet each, 4 cottages of 15x22 feet each, all having verandahs in front of 6 feet wide; the luna's house with a verandah on three sides; to this is added a general cook house and double closets, and the enclosed ground required for this section, as indicated in plan, was enlarged so as to allow more space between the houses. Mr. Heuck offered to estimate again on this part of the plan as enlarged and improved by the Board and to report at the next meeting. * * *

HONOLULU, June 10, 1865.

The subject of leprosy was then again discussed. Two propositions were considered, the one was to establish a settlement both for light and severe cases at a place near Honolulu, by which plan the work might be simplified, expenses lessened, and the whole matter concentrated; according to this plan a piece of ground, say from 5 to 8 miles distant from town, located on the sea shore, of an extent of about 50 acres would accommodate a settlement in which the severe and probably incurable cases could be separated from the general settlement of lighter cases, each division supplied with its own hospital and dwellings.

The other proposition was to establish hospitals and dwelling for light cases in a place near the sea shore, near Honolulu, of about 5 to 10 acres of ground, there to care for, and possibly cure such lighter cases of

* Foreman.

leprosy, and to select a large tract of land on one of the other islands where to put those lepers that are incurable and by reason of the advanced state of their disease, might, therefore, communicate it to others. The northern side of Molokai was thought to contain valleys which were by nature favorably located for the purpose, containing hundreds of acres of cultivable land, abundance of water, separated from other parts of the island by steep palis, and the landings on the sea shore difficult to approach so as to insure the seclusion desired.

A settlement established in one of these valleys, and supported until it may become self supporting in some measure would probably offer greater comfort to the afflicted and more protection against the spread of the disease.

The members of the Board took the most favorable view of the latter proposition, and will again consider the matter in detail at the next meeting. The President* proposed, in case the second proposition was adopted, to visit Molokai soon to select a proper locality. * * *

HONOLULU, July 6, 1865.

Messrs. Rhodes and Heuck reported favorably on the lot makai† of Kalihi; they had again visited the place, thought it well suited for the purpose, being makai of all other dwellings, secluded and so located as to be easy of supervision, there is no fresh water running on the place, but so much of this lot, belonging to a native woman Wahineaemalama, might be procured as bordering on the river, that there is a well on the premises, showing that others may be dug to ad-

* Hon. Godfrey Rhodes.

† Makai—Seaward side. Mauka—Landward side.

vantage. This lot of about 10 to 15 acres could be obtained for \$300.

They reported further that a lease held by W. Adams under Moechonua, can be had for about \$450 to \$500; this lease covers a tract of land adjoining the makai lot, of about 20 to 24 acres of good cultivable land; the yearly rent for this lot is \$30.

That D. Adams offered his lot adjoining the latter tract for \$1000 being about 9 acres.

The Board after fully considering this matter, thought it advisable to purchase the makai lot and the W. Adams lease only, and, on motion, resolved that the President be authorized to close for the purchase of these places, it being the object of the Board to locate the hospital for light cases of leprosy upon the makai lot and to use the leased land for raising kalo, potatoes, etc., etc., to support the hospital thereby as far as possible.

Mr. Heuck was then asked to design a plan for hospitals with necessary outhouses to commence with two buildings of about 20 by 60 or 70 feet each with verandah on one side, to house about 50 patients; besides a cook-house, privy, etc., etc., will be necessary.

The Board thinking favorably of the land on Molokai to be used for a settlement of severe cases of leprosy, on motion resolved that the President be authorized, if on examination the land is suitable for the purpose in his judgment, to take the necessary steps for procuring the same, also to do what is requisite preparatory to establishing a settlement thereon. * * *

FROM DR. WM. HILLEBRAND, SPECIAL HAWAIIAN
COMMISSIONER TO EXAMINE INTO LEPROSY, HONG
KONG, JULY 16, 1865.

* * * On my request Dr. Kerr accompanied me to the largest leper village near Canton. It is situated about two and a half miles from the suburbs of Canton, on a slight eminence, in the midst of cultivated fields, and accommodates between four and five hundred lepers with their children, born in the asylum. All persons recognized, or declared by the authorities to be lepers are sent to these asylums, of which there are three in the neighborhood of the city of Canton. Neither husband, wife or children are allowed to accompany the leper to the asylum, but they are allowed to choose themselves new conjugal mates from the inmates of the same. The children born from these unions remain in the village. I saw of them a great number, varying from the age of infancy to twenty-five years, and, in fact, judging from the great number of *sound* people in the settlement, the offspring would seem to be as numerous as the legitimate occupants of the place. Only one leper admitted that he was the son of another leper, then in the village. As a rule, they try to conceal their descent from diseased persons. The village itself forms a rectangle, surrounded by brick wall 12 feet high, with a gate which is closed every night. The following description may give you an idea of its inner arrangement: a street about 14 feet wide (wider than any street in Canton) leads from the street straight up from the temple or Josh-house. From this street branch out at right angles on each side about 14 narrow lanes $3\frac{1}{2}$ feet wide, each two separated by one single low building, partitioned again by a wall along its whole length and crossway by twelve to fourteen crosswalks, so as to form twenty-four narrow apartments. In these small holes that whole mass of population is stowed away

every night. Of course, I cannot speak with praise of its state of cleanliness, quite the reverse. During the day the gates are open and the lepers roam about at liberty, to beg through the streets of Canton. They receive besides, a small daily allowance from the Government, and the monopoly of the trade of coir rope making, by which they earn something in addition. I have given you this description more as a matter of curiosity than as a model of imitation, but you may induce from it this important fact, that isolation is by no means rigorous. The lepers leave the village in the daytime at leisure, and their friends enter as freely to visit them; circumstances which go far to demonstrate the popular opinion that the contagion is of a solid nature, not volatile or diffusible, and that it requires prolonged actual contact to communicate itself from one person to another. * * * *

From what I have seen there, I am satisfied that there exist three distinctly marked varieties.

1. The knobby tubercular form, which appears principally in the face, and next on the upper extremities, last on the trunk and lower extremities, in rounded or knotty protuberances, from the size of a pea to that of a small walnut, sometimes forming also more extended broad elevated patches. They are glossy, dark red and generally anæsthetic. Their further development ends either in exfoliative ulceration or in absorption. The latter termination which may be considered to be a spontaneous cure, leaves a loose flabby pouch of skin in their places, under which the hardened substance is no more perceptible. Anæsthesia of the not affected extremities may, or may not, co-exist with this form.

2. The erythematous or erysipelatous form. This appears in large glossy patches, principally on the cheeks, sometimes dark red, but at other times little discolored, hardly elevated over the surrounding skin. The anæsthesia of the cutaneous nerves is not so well pronounced as in the preceding form, sometimes alto-

gether absent. Anaesthesia of the extremities may or may not occur in this form, which we have also observed, but rarely on our islands.

3. The simply paretic (paralytic) form. To this form, which I have frequently enough observed on the islands, but never recognized as leprous, there is paralysis or paresis of the extensor muscles of the fingers and hands, most frequently by those supplied by the ulnar nerve (4th and 5th fingers) but gradually extending over all the fingers of one hand, which then are curved or bent like bird's claws. Anaesthesia of the paralyzed portions is nearly always present, and extends to some distance up the forearm. The skin of the affected parts is also harsh, does not perspire, and frequently is covered with a light furfuraceous desquamation. There is nothing found on most of these cases to indicate a paralysis from central causes (cerebrum or spinal marrow), although hemiplegia is sometimes associated with it. When I have seen this form at our islands, it was frequently associated with inveterate psoriasis, to the effect of which disease on the cutaneous nerves I used to attribute the contraction of the fingers, but here I have seen it altogether independent of psoriasis or other cutaneous eruptions. In this form there is mostly no alteration at all of the skin, neither knotty tubercules, nor erythematous thickening, although it may associate itself with either of those forms.

Psoriasis, such a common concomitant of leprous disease on our islands, I have found to be quite uncommon here. As a very characteristic symptom of lepra, even in the absence of other signs, Dr. Kerr pointed out to me a deep atonic ulcer of the planta pedis, just under the capitulum of the first metatarsal bone, but although I have seen it in several lepers, I still hesitate to consider it an essential symptom of the disease. I had seen these ulcers in Honolulu without becoming aware of a leprous character in them. I am inclined to think that these ulcers are apt to arise in that locality, when the skin has become anaesthetic, or physically

dead, because it is most exposed to pressure in walking of all the parts in the *planta pedis*. It is, therefore, an accidental, not an essential symptom.

That the disease can run out its course of itself, I am satisfied from observation. In the village I saw an elderly man without any fingers or toes at all, even the remnants of hands and feet exhibited only short unseemly stumps, and yet there was no more trace of ulceration. The stumps were covered with, to all appearance, healthy cicatricial tissues, and the formerly existing tubercles in the face were absorbed, leaving large, flabby folds of skin.

As is well known, the Chinese take the disease to be hereditary, but there must be a good many exceptions to the rule, to judge from the great number of sound children of lepers which I saw in the village. The opinion is prevalent that the disease will run out, after it has passed through the fourth generation. The generation, I believe, is considered clean by law. Of course, all take the disease to be contagious, with the limitation pointed out above.

It seems to be well established that the disease does not occur in the north of China. Wealthy patients from the south, who have gone to reside in the north, have been cured of the disease, but it broke out again when they returned south.

With regard to curative measures I have learned nothing. In Chinese books a remedy is recommended, called *Tai Foong Tye*, which is found to be identical with the *Tshaul Ungra* (*gynocardia odorata*) some years ago warmly recommended by Calcutta physicians against the disease. The experiments, made at Canton, with it by Dr. Hodgson and others, are, however, not quite satisfactory. The plant is a native of the East Indies, and I shall endeavor to procure seeds of it, and also of the *Asclepias gigantea* which bears an antileprous reputation.

* * * *

HONOLULU, September 5, 1865.

* * * The subject of leprosy was then discussed by the Board. Mr. De Varigny reported that the returns of assessors from nine districts on Hawaii and Maui showed about 120 cases of leprosy, mostly among persons of from 30 to 50 years of age; that 15 other districts were yet to be heard from, and the probability was that the total amount of reported cases would be from 250 to 300.

While the hospital at Kalihi was progressing, and while everything on Molokai looks favorably towards procuring the desired lands for severe cases of leprosy, the subject of transporting the sick from the various districts on the other islands to the inspection hospital at Kalihi, and from there back to their houses, or to Molokai, as the case may be, was discussed. It was thought best to purchase a vessel for this purpose in order to have complete control over it, rather than to charter one; which latter course would not only be more expensive, less reliable, and further hardly be right towards the public at large. A high charter might induce owners of vessels to hire such to the Board, and afterwards use them again for carrying passengers without that proper precaution due to the public health. * * * * * It was therefore moved to advertise for a vessel of from 40 to 50 tons to be offered for sale to the Board.

PURCHASE OF KALAUPAPA, MOLOKAI.

HONOLULU, September 20, 1865.

The President reported that he had, since the last meeting of the Board, again visited the island of Molokai, and had succeeded in procuring the desired tract of land at Kalaupapa. There are from seven to eight

hundred acres, excellent land for cultivation and grazing, with extensive kalo land belonging to it; there are from 15 to 20 good houses obtained with the land, the whole being obtained for about \$1,800 cash, together with some other Government lands given in exchange. A promise was made to the present inhabitants to remove them from there free of charge. Report adopted.

On motion of the President, Louis Lepart was appointed superintendent of the settlement Kalaupapa, Molokai, at a salary of \$400 a year. Mr. Lepart intending to live among the lepers sent there by the Board. * * * *

Mr. Heuck reported progress at Kalihi, that the establishment would be ready to receive the necessary furniture in a week or two. * * * *

At the next meeting, October 11, 1865, Mr. O. Bannister was appointed the first superintendent of the Kalihi Hospital, at a salary of \$900 a year from the 20th inst.

HONOLULU, November 3, 1865.

Dr. E. Hoffman was appointed by the Board of Health the first physician at the Kalihi Hospital at a salary of \$1200 a year, he to furnish all requisite medicine without extra charge. * * * *

The Secretary was directed to issue notices to lepers to report themselves on Monday the 13th inst., at the Kalihi Hospital for examination, accompanying said notices with copies of laws and regulations of the Board touching lepers. * * * *

NOTICE BY THE BOARD OF HEALTH.

WHEREAS, the last Legislative Assembly enacted a law entitled, "An Act to Prevent the Spread of Leprosy," which said law requires the Board of Health to take such measures as in their judgment shall be deemed expedient to endeavor to cure those persons who are afflicted with the disease, and to protect the public at large against contagion, at the same time fully empowering the said Board to carry out the purposes set forth in said Act,—

Therefore, all persons who are affected with leprosy, or who are suspected to be so affected, are hereby notified,

That, the Board of Health has established an hospital with suitable buildings at Kalihikai, on the Island of Oahu, about four miles from the city of Honolulu, where persons afflicted with leprosy will be inspected and medically treated, as well as carefully attended, with a view to effecting a cure. This hospital is carefully arranged by the Board, in order to ensure proper attendance and nursing of the patients, and at the same time to endeavor, by all possible means, to cure the disease with which they are afflicted. To this end, the Board will secure the best material and medical aid, and will carefully watch over the welfare of such lepers as may be committed to the hospital.

Time and experience will best prove the proper course to be adopted hereafter, but for the present, it is the intention of the Board to require that all cases of leprosy shall be removed to the hospital at Kalihikai for examination. All those who are reported as lepers, but found to suffer from other cutaneous diseases, will receive advice and medicine, and be either allowed to return to their homes, or receive medical treatment under the orders of the Board.

All cases of leprosy of which it is considered practicable to effect a cure, will be required to remain at the

hospital, in order to be properly treated and attended upon.

All such lepers as are in an advanced state of the disease, and liable to endanger the health of others who may come in contact with them, by spreading the contagion, will be required to remove to the settlement at Kalaupapa, on the Island of Molokai, which has been set apart for that purpose by the Board, and where all possible care will be extended to them.

In accordance with the foregoing Rules, the Board of Health hereby notifies all persons who may be affected with leprosy, to hold themselves in readiness to obey the directions of the duly authorized Agents of the Board, as to the time and mode of removing to the hospital at Kalihikai. Of this, proper and full notice will be given, and the Board relies upon a prompt compliance with the provisions of the law, and the rules and regulations issued for carrying the same into effect.

All public officers when called upon, and the public generally are requested to assist in carrying out these sanitary measures, so manifestly tending to the benefit of the public.

T. C. HEUCK,

Secretary Board of Health.

Office Board of Health, October 25, 1865.

[“Hawaiian Gazette,” November 18, 1865.]

OPENING OF THE KALIHU HOSPITAL.

This hospital, established for the examination and treatment of persons affected with leprosy, was opened on Monday last, the 13th inst., for the reception of patients.

According to notices sent out to about fifty persons reported to be lepers requiring them to appear at the hospital on the above date for examination, sixty-two

invalids reported themselves, showing the willingness and readiness on the part of our natives suffering from the disease, to conform to the rules of the Board of Health, so calculated to benefit them, and to avail themselves of the care and treatment which they, in their distressed condition, would receive at the hospital. They were accompanied by a large number of their friends, and at noon Dr. Ed. Hoffman, physician to the hospital, commenced a careful inspection of the sick. The doctor was assisted in the examination by Dr. C. F. Gilliou, who had kindly volunteered his valuable services.

The inspection resulted in finding forty-three persons affected with leprosy in its different stages; the remainder were not leprous, but suffering from milder diseases of other character, and had to be dismissed, on account of their being at present accommodations for about fifty patients only.

These persons were advised to call at the Queen's Hospital for medical advice and medicines to improve their health, or directed to call again at the Kalihi Hospital for that purpose, when the same had been placed in working order. Among the forty-three leprous persons, thirty-two were male and eleven female.

Owing to the large number of examinations made on Monday, and the great concourse of people who had accompanied their suffering friends, no more could be done that day except explaining to the patients the intentions of the Board of Health to improve their conditions, and what the Board and its officers desired them to do.

Many of the applicants for admission to the hospital not being ready to remain there then, were allowed to return to their homes to prepare for removal to Kalihi, and were required to return the next day, but several prepared to remain there at once.

The Board of Health was represented by Messrs. G. Rhodes and Th. C. Heuck on this occasion, the other members being unavoidably prevented from attending by other business.

In order to explain to the patients the purpose for which this hospital was established, as also to give some general rules for the guidance of its inmates, Mr. Th. C. Heuck, in the name of the Board, addressed those present, explaining the Act of the last Legislature under which this hospital was founded, and explaining also the intentions of the Board, the rules and regulations thus far issued; that everything in the power of the Board and its officers would be done to care for and cure them; that proper attention to medical advice was desired of them; that they were expected to follow all directions as to cleanliness, diet and regularity, while at the hospital; that their friends might visit them once a week at stated hours; and that a prompt compliance on their part with the rules to be adopted for their good, would best assist in promoting their own interests; and further, that it was hoped that, God willing, proper medical aid, combined with comfort and care, sufficient and wholesome food, and the general provisions made for them at the hospital and elsewhere, the disease might soon be checked, and thus while those afflicted were receiving the requisite help, the community at large, at the same time, would be benefitted and guarded against a further spread of the evil.

The invalids listened with interest, no dissenting voice was heard, and all appeared satisfied and ready to do what was required of them.

The next day brought all forty-three patients again to the hospital. Since then seven more have been added, among them two children.

Both the doctor and the superintendent do the best they can for the inmates of the hospital. It is as yet too early to be able to report great results of the few days' treatment, although it will appear that the change for the better in living brought about by living at the hospital, has already had a good effect on some of the patients.

It is gratifying indeed to observe the readiness with which the natives come forward, the confidence which

they feel toward the Board of Health, and willingness to conform to our rules, which will much tend to lessen both labor and expense in carrying out the necessary measures to prevent the spread of leprosy, and in effecting cures wherever a cure is possible.

THE LEPER SETTLEMENT AT KALIHI.

[“Hawaiian Gazette,” December 2, 1865.]

We learn that this institution is getting on finely. There appears to be a strong disposition among the natives who are afflicted with cutaneous diseases to avail themselves of the facilities which the Government, by the authority of the last Legislature, have placed within their reach for the cure of leprosy. There are some fifty patients now at Kalihi and they all, without exception, appear to be extremely well satisfied with their quarters and the treatment they receive. A letter has been written by one of the natives there, who is quite an intelligent man, in which he gives an account of a day at the hospital. We translate a portion. He says: “Dr. Hoffman, who is the attending physician, comes early and attends very carefully on the patients. We think he is very earnest and faithful in his endeavors to cure us. There is but one feeling among us all, and that is respect for the Doctor and love to the Government which has thus carefully provided for us unfortunates.”

Such an expression of feeling from the natives themselves, goes far to prove the wisdom of the measures which have been taken to prevent the spread of leprosy, as well as the very proper and acceptable manner in which those measures have been carried out.

REPORT OF E. HOFFMANN, M. D., PHYSICIAN TO THE
LEPER HOSPITAL AT KALIHI, OAHU, MAR. 2, 1866.

*To the Minister of the Interior, President of the Board of
Health,* Etc.*

SIR:—I have the honor to lay before you the following report, as physician at the Leper Hospital at Kalihi, Oahu:

Since the establishment of the hospital in November last there have been received and examined by me 165 persons, of whom 68 were discharged as not coming within the provision for which the hospital was established, and 104 remained for treatment. Of these 104, 47 have been sent according to your directions to the leper settlement on Molokai; 28 were found upon treatment to have been afflicted with other cutaneous diseases, difficult at first to distinguish from leprosy; but when so ascertained they were, however, according to your instructions, detained and cured, or some nearly so, and then returned to their homes with the privilege of obtaining money gratis for their perfect cures. Twenty-nine still remain under treatment, being the balance of those received from the Island of Oahu; but I expect soon to receive an additional number of patients from Maui.

Your Excellency will permit me, perhaps, to offer my remarks upon this fearful disease of leprosy, as I have found it during my course of treatment of the patients sent to the hospital.

The following synopsis generally accompanying the disease have been observed, viz.: General depression, a local sensation of heaviness, (kaumaha), fever, sometimes are premonitory symptoms of this disease more frequently, however, these are wanting, and the patients are not aware of being sick until spots, which I am now going to describe, are visible on the skin. The

* His Ex. Ferd. W. Hutchison.

changes consist at first in irregular livid red spots in the face, and at a later period the ears and nose are similarly attacked. In some instances the whole body more or less is covered with them or a somewhat scaly eruption. Slight itching is sometimes felt but not always. These spots are insensible to touch (anæsthesia). Regarding the symptoms, I insert the following remarks of Thelling:

“COMMENT DE LEPRO.—Coloris mutatis duplex est, nam vel rubræ nascuntur maculæ in pallidum vergentes, vel albæ et calorem flavum lividum aut rubrum tendentes. In priore casu Pili: qui in parte affecta sunt subflavi aut subrubri apparento; in posteriori casu albi conspiciuntur. Insensibilitas etiam utrique communis est, abque nisi duo, quas dixi, characteres conjuncti sunt, lepra haberi et vocari nequit.”

The spots referred to are somewhat elevated, shining, and by and by, become darker; after a shorter or longer period small, hard, or soft, tubercles appear, mostly in those on the face of the same color, which become after a while confluent and form irregular tubercles of the size of a pea to a hen's egg; the face now becomes much disfigured, the skin rough, full of wrinkles and fissures, similar to the skin of an elephant (elephantiasis tubercles); nose and ears are much increased in size, the first sometimes depressed in the middle; nostrils are enlarged, eyes become inflamed, the lids nearly covering the eye, lips are enormously swollen; the chin also, and the whole face has a horrid appearance. With this the voice becomes hoarse, and sometimes a difficulty of swallowing takes place. The nails of the hand and feet become affected; the former are raised by matter deposited under them. The feet and forearms swelled; ulcers form on the metatarsal articulations of the fingers and toes, without any pain. The skin becomes gangrenous, leaving the muscles bare. Joints are thus attacked and destroyed in succession by the slow progress of this terrible disease, which renders those affected with it objects of horror. During the progress of the disease the pulse is regular, appetite good, and no apparent internal morbid symp-

toms take place. How this disease terminates in death I have not yet been able to observe, as, so far, none have yet died in the hospital. In my opinion this is the form of lepra called "Elephantiasis Sea Lepra Græcorum." Here, the disease is complicated in most instances with syphilis and psoriasis, scabies and cognate diseases. In no instance that has come under my observation have I been able to trace this disease to a true, and to me, satisfactory origin. From all the information I can obtain, I am led to believe that, though the disease had existed previously in this country for many years in single and scattered instances, yet within the last fifteen years it has assumed a more spreading and malignant character, caused, perhaps, in a measure by the type of syphilis and cutaneous diseases introduced into the country by coolies within fifteen years. It affords me great satisfaction to state that all the patients received and treated at the hospital have, owing to the liberal and generous treatment of food, dwelling and cleanliness afforded by the Government, combined with medical attendance, most materially improved in their condition, by being cured from those combined diseases with which they were affected at the time of their reception. How far the leprosy itself when free from these aggravating complications is curable I have not yet had time to ascertain, owing to the removal of the patients to Molokai for the purpose of being isolated, but I hope as soon as it may be practicable, and all the afflicted have been collected, a portion may be returned to the Kalihī hospital for further treatment, and to ascertain that important fact. Whether the disease is contagious or not I have not had sufficiently reliable data to enable me to pronounce an opinion upon. Except three instances no one received at the hospital acknowledge that either their parents, their children, relations or cohabitants were afflicted with it. I am inclined, therefore, to assume that if contagious, it is only so on a close and continued contact with a leprous subject, and under others not yet fully ascertained predisposing causes.

It affords me, in conclusion, the great pleasure to report to Your Excellency, the happy effect upon the lepers the establishment of this hospital has produced, and the grateful and contented condition of mind of those so terribly afflicted. * * * *

REPORT OF THE BOARD OF HEALTH TO THE LEGISLATURE OF 1866.*

Nobles and Representatives:

In accordance with the provisions of an Act passed at the last session of the Legislative Assembly, entitled "An Act to prevent the spread of Leprosy," the Board of Health have the honor to report as follows:

Shortly after the passage of the Act referred to, the then Minister of the Interior convened the Board for the purpose of taking into consideration the important matters committed to its care. After due consideration, it was concluded to purchase a tract of land situated in Palolo Valley, Oahu, for the purpose of erecting a hospital, as contemplated by Section IV of the Act. As soon however as the action of the Board became known, owners of property in the neighborhood of Palolo, especially those owning lands bordering on the stream which issues from the valley, objected strongly to the location of the proposed hospital at that place, the principal reason given being that the water of the stream would become contaminated and dangerous to health. These objections appeared reasonable to the Board, and a search was at once instituted for a locality which from its position would obviate any reasonable objections by owners or occupants of lands near the establishment which it was proposed to erect. This, however, was found to be no easy task, inasmuch as a full supply of

* Reign of His Majesty King Kamehameha V.—Third year.

water was one of the first requisites. Finally, a site was procured at Kalihi, bordering on the stream of that name, and buildings have been erected thereon capable of accommodating sixty patients, together with the necessary outhouses, kitchen, bath-houses, and superintendent's dwelling. This locality has proved well adapted for the purpose contemplated, being isolated from other habitations, within a short distance of Honolulu, enjoying a fine current of air, and of easy access by the Board and its officers as well as by the physician in charge of the health of the patients.

In addition to the hospital established for the reception and examination of all reported as lepers, and the attempted cure of those in the early stages of the disease, a permanent settlement has been formed by the Board on the northern side of the Island of Molokai. The present President of the Board has visited that locality twice, and has effected the purchase of all private rights in the valleys of Waikolu and Wainiha, which rights have been transferred to the Board. The principal portion of the land belonged to the Government, but was held by a company under a lease, the transfer of which had to be negotiated.

The tract was extremely well situated for the purpose designed. It is difficult of access from the sea; has no roads passing through it into other districts; is supplied with water by two running streams; has a large area of kalo land; enjoys the advantage of the constant trade wind; has ample grazing lands; and possesses a soil capable of raising vegetables of all different kinds adapted to these islands in the greatest abundance. These lands are situated on a peninsula, washed by the sea on three sides, and bounded by high precipices on the south, the only access being by a path cut in the pali of 1,800 feet elevation.

In purchasing the rights and interests of private parties in houses and lands, the Board made use of the agency of Mr. R. W. Meyer, to whom they are much indebted for the zeal and interest he evinced in perfect-

ing the arrangements required to be made. Some of the lands, houses, etc., were paid for in money, (for which see Appendix exhibiting the expenditures of the Board), and for some, other lands on the same island belonging to the Government were given in exchange. A few days since a large tract of land, known as Makana-lua, belonging to the estate of the late Haalelea, and immediately adjoining the leper settlement, was purchased for the Board. This acquisition gives the Government the ownership of, nearly all the lands on the peninsula, and separates by a long interval the few persons who reside at the landing place at Kalaupapa from the lepers, rendering any intercourse with them both unnecessary and excuseless.

A supervisor has been engaged to carry out the arrangements necessary for the comfort of those unfortunate people, who reside on the land, and is the medium of communication between the settlement and the Board.

By reports furnished to the Government by the different Tax Assessors, by direction of the Minister of Finance, the following number of persons on the different islands were represented as afflicted with the disease of leprosy :

Hawaii.....	75
Maui, Molokai and Lanai.....	112
Oahu.....	80
Kauai and Niihau.....	7
Total.....	274

The hospital at Kalihi having been finished and furnished, and the necessary officers and attendants provided, the Board proceeded with the onerous duty of collecting and removing thither every person whose name had been reported to them as suffering with the disease.

The lepers residing on Oahu were first required to at-

tend at the hospital. It had been anticipated that no little difficulty and opposition would be experienced in attempting to carry out the provisions of the Act, but the reverse of this was the case. A much larger number from the Island of Oahu, who were received at the Hospital and examined by the physician, will appear by his report to the Board on the 2nd of March, 1866.*

* * * * *

All the known cases on Oahu have been examined and cared for, but there is reason to believe that a few still remain concealed by their friends. Enquiries are still being prosecuted on this point.

Sixty-nine patients have been brought from Maui, and it is believed that there are no more cases remaining on the western part of that island. Those reported on East Maui are now being brought from thence by direction of the Board, after which those on Hawaii will be taken in hand, and it is hoped that the Kingdom will have been thoroughly gone through with in from four to five months.

The whole number of persons examined at the Kalihi Hospital up to the present time is 234, of whom 76 were discharged as not being lepers, 57 have been sent to the settlement at Molokai, a number have been ascertained to be afflicted with cutaneous and syphilitic diseases, and the remainder are under treatment at the Hospital.

The Board have deemed it advisable to purchase a few beef cattle, sheep, goats, etc., for the use of the settlement at Molokai, in order that it may, as far as possible, become self-supporting in the future.

It is gratifying to be able to state what is undoubtedly a fact, that the condition of these poor people has been improved in every respect by their having been transferred to the care of the Government. Their general health has improved, and they enjoy a greater degree of liberty than when living among their friends.

* Vide Dr. Hoffmann's Report, page 34.

where they were usually confined to small huts, ashamed to show themselves and shunned by every one. We are informed that those sent to Molokai have settled contentedly on the place, and those able to work have commenced to erect new houses and cultivate the land, feeling that they are permanent settlers there. They express themselves satisfied and contented, and appear to be so. In a few cases, fathers, mothers, wives and husbands have been allowed to accompany their afflicted relatives.

Dr. Hillebrand, the King's Commissioner to China, was instructed to visit the Leper Establishments in the different countries which he was about to visit, and report to the Board as to the method of isolation, medical treatment, etc., which is pursued in those countries. The sum of \$1,000 was appropriated out of the funds at the disposal of the Board to defray a part of the Doctor's expenses. He has communicated what he has learned, up to the date of his last letter, but unfortunately it amounts to little more than that which observation had already taught us here, as the class of people in question are generally shunned and little cared for among the nations in which the disease is developed and propagated.

Several attempts were made by the Board to purchase or charter a suitable vessel for the transportation of the sick, but for some time without success. Finally the schooner Warwick was engaged at the rate of \$250 per month, but there being some delay in her trips, the Board have purchased her for \$800, and it is hoped that the work will proceed with more expedition than before.

The land purchased at Palolo is still the property of the Board. It will probably be taken by the Government for other purposes.

The important question as to whether the disease is contagious, and if so, under what conditions, as well as its curability, is still a matter of doubt. On this point

the Board again refers to the report of the physician.
 * * * * *

No epidemic has visited this Kingdom during the last biennial period. Reports of suspicious cases, resembling small-pox, have on two or three occasions been made to the Board. Prompt action has been taken in each case, and the patients isolated and cared for.
 * * * * *

Medicines have been sent, whenever applied for, to competent persons willing to distribute them gratuitously, to relieve the poor and diseased, and it is believed that many lives have been saved and much misery relieved by those philanthropic persons.

F. W. HUTCHISON,
 President of the Board of Health.

EXPENDITURE OF THE BOARD OF HEALTH, DURING THE TWO YEARS ENDING MARCH 31st, 1866.

To check the spread of leprosy, viz.:

Land in Palolo Valley.....	\$1,002 50
Payment towards Dr. Hillebrand's Mission....	1,000 00
Lands on Molokai.	3,471 75
Lands at Kalihi, Oahu.....	665 00
Buildings, fences, and other improvements at Kalihi.....	3,702 03
Furniture, etc., for same.....	764 50
Current expenses at the Kalihi Hospital, including Doctor's and Superintendent's salary, medicines, pay of servants, etc., from Nov. 12th, 1865, to March 31st, 1866.....	982 75
Paid for provisions and clothing at Kalihi Hospital during same time.....	1,039 15
Paid for provisions, clothing, medicines, agricultural implements, tools, canoe, fishing nets, carts, oxen, etc., for the settlement at Molokai.....	1,801 43
Paid for cattle, sheep, goats, poultry and other live stock for above settlement	450 00

Superintendent's salary at Molokai, 4 months..	133 37
Paid schooner "Warwick," as per charter....	1,000 00
	\$16,012 48
General expenses of the Board of Health....	7,231 21
Total..	\$22,243 69

REPORT OF THE BOARD OF HEALTH TO THE LEGISLATIVE ASSEMBLY OF 1868, BY HIS EXCELLENCY F. W. HUTCHISON, PRESIDENT.

Nobles and Representatives :—As required by the Act of the Legislature passed on the 3rd day of January, 1865, the following report is respectfully presented to the Legislative Assembly on the part of the Board of Health.

The duties imposed by the above Act, were of the most onerous and delicate kind, and the Board could not hope to perform them with fidelity and success without encountering many difficulties. But the obstacles actually met with have exceeded even the anticipations of the Board. They were caused, partly, by the lepers themselves; partly by the apathy and want of co-operation on the part of the public, and partly by the inadequacy of the appropriation which had been applied for by the Board, and granted by the last Legislature. The insufficiency of the fund was soon discovered, and the strictest economy, and the most rigid supervision of the expenses became necessary, nearly \$10,000 having been expended the first six months of the biennial period, expiring March 31st of the year 1868.

One of the greatest difficulties experienced by the Board has been the lack of means of transportation.

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Again, when the lands were purchased on Molokai, it was confidently expected that the first outlay there, would be the principal one required, and that the Valley

of Waikolu, and surrounding lands, than which no richer can be found throughout the group, would be cheerfully cultivated by the strongest of the lepers, and that, except for clothes and perhaps some animal food, the resources at the disposal of the Board would not be subjected to a regular and constant drain. But a great disappointment was soon experienced in this respect; the terrible disease which afflicts the Lepers seems to cause among them as great a change in their moral and mental organization as in their physical constitution; so far from aiding their weaker brethren, the strong took possession of everything, devoured and destroyed the large quantity of food on the lands, and altogether refused to replant anything; indeed, they had no compunction in taking from those who were disabled and dying, the material supplies of clothes and food which were dispensed by the Superintendent for the use of the latter; they exhibited the most thorough indifference to the sufferings, and the most utter absence of consideration for the wants, to which many of them were destined to be themselves exposed in perhaps a few weeks; in fact, the most of those in whom the disease had progressed considerably, showed the greatest thoughtlessness and heartlessness. The Superintendent, therefore, in the month of September, 1866, informed the Board to its great surprise, that supplies must be sent for the future from Honolulu, as the settlement would be able to produce but little from that time forth. This state of things, which it was hoped for some time might be changed, has been found irremediable, and the Legislature must be asked to supply absolutely for the future all the wants of these people. Such a state of things is to be regretted, but inasmuch as the lepers are deprived by the law of the ordinary rights of citizens, and as a restraint is placed upon their liberty for the *good* of the community at large, that community incurs a responsibility, which with its accompanying burthens, must be honorably and cheerfully accepted. It is hoped that in a few months it will

not be necessary to send ordinary provisions from Honolulu, as the Board has lately removed all the lepers from the Waikolu Valley, where the Kalo lands are situated, and leased those lands on the condition that the necessary supplies of kalo and pai ai are furnished to the order of the Superintendent. A supply of pai ai, averaging about 130 pounds per diem, has been obtained from the settlement and adjacent valleys for the last six months, and it is hoped that a large quantity may be obtained in the coming summer months, in which case the supplies needed from Honolulu will be very materially lessened. In justice, moreover, to the lepers, it must be recorded, that sweet potatoes and other vegetables in considerable quantities have been planted by them, but as the late stormy winds and cold rains have destroyed most of the plants and vines, very little food will be derived from this source; it must also be observed, that those who plant, consider themselves entitled to the same ordinary supplies as those who do not, and it is difficult to perceive the injustice of this claim. Again, one of the symptoms of this disease is an extraordinary increase of appetite, a great voracity, and constant longing for food; the quantity each patient will devour, if left to himself, is incredible to those who have not witnessed it; this craving never appears to be satisfied, and in two or three instances when opportunities of gorging the stomach with animal food have presented themselves, death in a few hours has been the result.

In connection with this food supply in Molokai, it should be remembered that letters were published in Honolulu on or about January, 1867, reflecting severely on the Board for its alleged want of care of the Molokai Settlement, and distinctly charging it with inhumanity in allowing the unfortunate people sent there to perish from starvation and the want of ordinary necessities of life. Upon this, at the request of the Board, its President took the first opportunity of visiting the Settlement. He called at every house, and had com-

munication with every one of the patients, who all denied absolutely having made any such statements or complaints as were attributed to them; they stated indeed, that they had some pilikias, that they would like to have more food allowed them, and that they wished to kill the cattle belonging to the Board, which they understood had been sent for their use; but as a general thing, they were satisfied with what had been done for them, and with Mr. Lepart their superintendent. So far from being in the miserable condition described in those letters, most of them looked well and stout, compared with their appearance when first entrusted to the Board. The peculiar and frightful nature of the disease might easily mislead non-medical men who carefully avoid contact with the subjects of it, or even medical men who had had no previous experience of it. But while the parties who made the adverse reports thought that they had found evils which really had no existence, they, owing to the superficial nature of their examination of the settlement, altogether omitted to notice wants really existing and palpable. The President of the Board says that two things were absolutely necessary: First, a hospital for the accommodation of those who were in the last stage of leprosy, or of other diseases of which leprosy was the cause; and secondly, a female nurse, with some knowledge of medicine, who would sympathize with the sufferers, and take charge of the establishment when the building should be erected. Orders were therefore given to Mr. Lepart to have such building put up at once, and efforts were made to secure the services of a person competent to take charge. With the first, however, it was found that nothing could be done, from the resources on the spot, towards erecting the proposed establishment. The patients themselves would do nothing, and the people of Kalau-papa, after a feeble attempt to undertake the work by cutting a few posts, declined troubling themselves further about the matter. Workmen and materials had therefore to be sent from Honolulu, and the Board is

happy to report that a comfortable building, capable of supplying the wants of the settlement has been erected and used for some months, greatly alleviating the miseries of the poor sufferers, and smoothing their inevitable course to the grave. * * * *

As may easily be imagined, one of the most serious troubles on Mōlokai, to the Board and manager, has been the difficulty of maintaining order. Drunkenness, pilferings, immorality and general insubordination were very prevalent; ki-root beer was manufactured and drunk in very large quantities, and great orgies took place. But the Board is happy to report that for the last few months a very different state of things has existed. Drunkenness and insubordination have almost entirely disappeared, and it is to be hoped that further experience in the management will tend to develop a system well calculated to produce a good and desirable result. The change has been mainly brought about by the appointment of Mr. Walsh as Magistrate for the Peninsula; by this means he is enabled to keep the residents under control. It has been further assisted by making constables out of the husbands of diseased women. These men in return for their services are allowed, at their own request, to reside with their wives, rations and clothing being issued to them in the same quantities and at the same times as to the lepers themselves.

In addition to the hospital, a comfortable house has been erected for Mr. and Mrs. Walsh, as also a school house for the children, and separate sleeping apartments for the boys and girls. All these buildings, including the hospital, are enclosed within one fence, and are under the exclusive care of the superintendent and nurse. * * *

A serious cause of embarrassment has been the separation of families. In some cases this has produced no feeling whatever in the parties interested; sometimes, indeed, the separation is felt to be a relief; in other cases it has been regarded as a great grievance,

and, in consequence, many lepers are carefully concealed from the knowledge of the Board. There have been two runaways from Kalihi, and all enquiries have failed to elicit the places of their concealment. Whenever wives, husbands, or parents have expressed a desire to accompany their relations, the Board has not thought it would be justified in refusing the application; it would seem right, however, that some provision should be made by law for the support of those children of lepers who have no friends willing to take charge of them. It is also worthy of the consideration of the Legislature, whether divorces should not be granted to the wife or husband of a leper, if the said leper has been certified as having the disease—whether, in fact, the party afflicted should not be regarded by the Court as “civilly dead.”

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Inasmuch, however, as the only justification for taking possession of these people, and depriving them of their personal liberty, is the attempt to exterminate the disease, complete and absolute isolation should be recognized as necessary.

Is the disease contagious?

Although there is high authority in other countries to the contrary, the Board believes that it may pronounce a positive opinion in the affirmative, and it is believed that opinion will be upheld by every physician on the islands who has had experience of the disease; but it can hardly be determined exactly under what conditions the contagion takes place; it does not appear to be very active; and probably (under ordinary circumstances) it does not occur in the early stages of the disease; but in the ulcerative form the danger is great. By reference to the returns from Kalihi, it will be seen that the male sex are more liable to the disease than the female, and experience shows that the latter communicate the disease much more rapidly than the former. It may be worth mention, that there is a man on Molokai in the last stages

of leprosy, who has a wife apparently healthy; this woman has had two husbands who have both shown the disease after their marriage to her. There can be no doubt the disease is inherited in some cases, but it does not show itself until after the sixth year after birth.

Is it curable?

To this question we are constrained to answer "No!" At least, not under any known treatment.

This has been the experience of all countries and ages to the present time, and it would seem desirable that leprosy patients should understand this; it is cruel to hold out hopes that can never be realized. Cures have been reported which seem real, but they have no doubt been cases of other diseases, difficult to discriminate from leprosy in the first stages of their appearance. Medicine and hygiene will ameliorate the condition of the victims for a time, especially when first used; but soon the poison begins to make fresh way, and, despite what is done, the inevitable result will occur, viz.: a premature death. The duration of the disease varies much; in some cases the operation of the disease goes on for many years; in others it runs its course very quickly. The following is the ascertained duration in 171 individuals.

Of 15 years' standing	2 cases
" 14 " "	3 "
" 13 " "	2 "
" 12 " "	7 "
" 10 " "	9 "
" 9 " "	7 "
" 8 " "	32 "
" 3 to 1 years' standing	94 "
Under 1 " "	15 "
* " * " * " * " *	

Statement of expenditures for the biennial period, ending March 31, 1868:

Kalihi Asylum.....	\$ 9,241.54
Molokai Asylum.....	15,562.06

\$24,803.60

KALIHI HOSPITAL.

Since opening in November, 1865, to March 31, 1868.

Number presented for examination officially or voluntarily.....	711
“ Discharged as not being lepers	375
“ Admitted to the hospital.....	336
“ Of the latter afterwards discharged from the hospital as having merely cutaneous diseases.....	107
“ Of the latter afterwards returned to the hospital as lepers.....	7
“ Sent to Molokai	174
“ Died.....	17
“ Run away	2
“ At present at hospital	43
Whole number admitted as lepers	336
Males, 223 : females, 113 ; children, under 14 years of age, 16.	

MOLOKAI.

Number entered since opening	179
“ Discharged.....	6
“ Died.....	47
“ At Asylum March 31, 1868	126

REPORT OF THE BOARD OF HEALTH, 1870, FERD W.
HUTCHISON, PRESIDENT.

Nobles and Representatives:

In compliance with Sec. 7 of the “Act to prevent the spread of Leprosy,” the Board of Health respectfully submit the following report :

When the Legislature in 1865 placed upon the Statute Book the above named Act, they recognized the existence amongst us of a disease, rapidly extending itself, believed to be contagious by those who had opportunities of observing its progress amongst the people and causing considerable alarm to the majority of our citizens. It had been a subject of agitation for years previous, whether a stringent law should not be

passed for the isolation of those afflicted with the malady, in the same manner as is usual in those countries whence it has been derived. The agitation of the matter culminated in the law, whereby the Minister of the Interior as President of the Board of Health, acting with the approval of the Board, is authorized to isolate and confine all leprous patients who shall be deemed capable of spreading the disease of leprosy.

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Many difficulties had to be overcome, but it is gratifying to say that the work has been accomplished on the whole in a satisfactory manner; it is believed that there are now few lepers not under supervision.

* * * * *

Dr. Hoffmann, physician to the Kalihi Hospital, reports that "no new cases, either genuine or doubtful came to his knowledge, during the last six months, and it may therefore be presumed that the measures of H. M.'s Government to prevent the spread of the disease have produced very good results." No doubt fresh cases will present themselves from time to time, but there is good reason to believe that if isolation is rigidly enforced for some years, the same result will follow here as in all other countries where that policy has been pursued, viz., a final disappearance of the disease.

* * * *

The duty confided to the Board is a delicate and difficult one, the forcible separation of individuals from their friends and the world, although necessary for the welfare of society at large, must appear harsh to many of those afflicted, and even to many persons not personally interested in the matter; more especially is this the case to those who conscientiously think the disease not to be contagious or dangerous to those who habitually live with the lepers—many such persons are in our midst, and the Board is bound to say, that such an opinion is promulgated by many physicians in India and other countries, where the disease has been known from time immemorial. Some years since, the British

Government requested the College of Physicians in London to examine and report on the subject; they sent circulars to all the medical officers of the army in India, as well as gentlemen in private practice, and received some hundred of replies, some reporting that it was decidedly contagious, and some that it was not; it is not unfair to say, however, that most of those making reports had not paid attention to the history and character of the disease, on which they gave an opinion—in fact, it may be said, that no attention whatever had been paid to the subject until called forth in this manner; and it is a well known fact that many of the gentlemen who reported as to its non-contagious character have since changed that opinion, brought about from a continued study of the disease. Several works by professional men have lately appeared on the subject; one of the latest treats of the disease as observed in “Surinam,” and the author, Dr. Landre, amongst others, gives “twelve cases of children of European parents who contracted the disease, the parents being perfectly free from all suspicion of it, being of the higher classes and in easy circumstances. They could not have inherited it; but all were known to have come in contact with Lepers.” This opinion entirely agrees with the observations made in this kingdom, by those capable of judging the facts; and the Board have no hesitation in re-asserting the opinion made in their last report that “the disease is contagious,”—that it is a distinct morbidic poison introduced into the blood by a person suffering from the complaint, and that it is also transmitted by inheritance, of the latter assertion there can be no doubt whatever—in the early form the danger of contagion does not appear to be great—it would also seem that the development is very slow in most cases, but active and sudden in a few. It is the opinion of some, that the disease is caused by syphilitic disease and is merely an ulterior consequence of that disease; there are others who insist that the cause must be looked for in the use of

“Awa.” Neither of these opinions can be entertained for a moment. Whenever a preconceived opinion has been made on the origin of a disease, it is easy to discover facts apparently supporting the idea; the notion that “awa” for instance is connected with the trouble is upheld in this manner. “Have you ever taken awa in quantities?” “Yes!” and the answer is put on record as irrefragable proof of the truth of the theory. It is well known that the Hawaiian people universally believe that “awa” is a sovereign remedy for all kinds of skin diseases, and are certain to go through regular courses of the drug when so afflicted, the answer in the affirmative may therefore be relied on. The Board is pleased to say that with the lepers themselves very little trouble or opposition to the law has been experienced, as a general thing they willingly resign themselves to its orders, and in most cases, they no doubt are placed in a more comfortable position than when residing with their own friends. Still, most painful scenes are sometimes experienced on the forcible separation of husbands and wives, parents and children; in all such cases every endeavor has been made to lighten the stroke as much as possible, and these endeavors have been attended with considerable success.

Three large houses adjoining the Hospital capable of lodging twenty-five persons each, have been erected in the settlement, with cook house, and separate buildings for the male and female children. House frames for the lepers in the general settlement have also been supplied, and sufficient accomodation to lodge all in a comfortable manner is now provided in the Asylum.

* * * * *

The necessity for extraordinary legislation to preserve order in the settlement is very apparent. The law as it now stands “authorizes isolation and confinement in some place or places for that purpose to be provided,” but provides no means outside the ordinary courts of the Kingdom or the general laws of the country for that purpose—it is clear that in a case so exceptional,

the usual fines and penalties inflicted by the courts, if carried out, would defeat entirely the object of the Legislature; a money fine could not be collected, and in case the offender was sent to prison to work it out in the ordinary manner, the persons amongst whom he was placed would run great risk of being infected with the disease—besides, some of the worst diseased are the leaders in all cases of trouble and insubordination—were they sent to prison, no work could be obtained from them, physical inability on their part and compassion on the part of the authorities would forbid such a thing. Legislation on this subject will be submitted for your consideration. A Bill will also be introduced to your notice, imposing a penalty on all persons found in the settlement on any pretence whatever, who cannot show a permit to visit or reside in the place, from the President or Secretary of the Board: this measure is absolutely necessary. At present, a number of men and women pass backwards and forwards between the place and the different islands, setting at defiance all warnings given to them by the Board or its officers, and in many cases, the parties (strange as it may appear) are the paramours of lepers, often of those in the advanced stage of the disease.

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The regular supply of food has given more trouble and anxiety than all others relating to the government of the settlement put together; the valley of Waikolu could and ought to produce kalo in abundance, but these lepers who are comparatively well, in the first stages of the disease only, and who might cultivate it without danger to their lives, if they saw fit, will not do it. Those in whom sloughing of the hands and feet had commenced, as a rule, were the few who showed any industry in the matter, the result being the rapid shortening of their lives, at the same time, that system neither gave a regular supply nor reduced the expenses; those who were industrious and had a yield in their kalo patches, consider themselves entitled to an equal

issue of rations with their lazy and careless companions ; at the same time, the valley was made a resort for many irregular and improper practices, in many cases, with the aid and countenance of the residents at Kalaupapa. This unsatisfactory result determined the Board to order all the lepers into the main settlement, and the kalo lands were transferred to a man not under the control of the Board, in expectation that sufficient kalo would be planted and supplied at a moderate price for the wants of the settlement ; their hopes, however, were not justified, and the majority of the lepers themselves, having petitioned the Board to allow them twenty-five cents per week each in lieu of the supply of kalo, their request was granted, and until lately, their necessities were provided by canoes bringing them sufficient paiai for their wants, from the different valleys on the north side of Molokai. On a sudden, information was received that there was almost a total failure of the staple from that source, and that food must be sent from Honolulu, which was done as soon as a vessel could be procured for that purpose ; before it could arrive, however, some privation had been experienced. The breaking open of the stores occurred on the arrival of the supplies. It is necessary however, to inform you that the lepers are better off under any circumstances, than the people who live at Kalaupapa, they having better supplies of vegetables on hand in their own enclosures, and rations of meat being issued to all, weekly. Arrangements have been made to supply a stated number of bundles of paiai for the next three months at a cost, however, of fifty cents per bundle.

The expenses of the Board are given in Table A. It has been their anxious care to reduce them to as low a scale as possible, conditioned with a due regard to the wants and necessities of those placed under their care. It is worthy of consideration, whether the hospital at Kalihi might not be abolished altogether, or at any rate reduced to a place where suspected persons are merely

retained until the disease has become developed, when they should be immediately sent to the general settlement.

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The following letter from Dr. Beratz, (a gentleman who has traveled on the Island of Hawaii for four months and an independent observer) is here inserted as bearing on this subject, the opinions here expressed being in accordance with the views of the Board, on this interesting and important matter.

“ The impression received from various books, before I visited the Hawaiian Islands, in regard to syphilitic diseases among the natives was much changed when, during my stay on the Island of Hawaii I had an opportunity to observe and form an idea of the state of things. I really think that there is not more fresh syphilis to be found among the natives of these islands, than among any other population of the same number in any European or American country. During my trip of four months around the Island of Hawaii, stopping several weeks at the principal places where sick people of all sorts made their appearance, asking for advice and medicine; I am glad to state that the number of patients afflicted with constitutional syphilis was only a small one.

“ My special attention was also directed to leprosy. Three cases were all that came under my observation, two with the first symptoms of the disease; the third, in Waimanu Valley, near the large cascade, with all the appearance and affections which we comprehend under the name of leprosy. On this occasion I may state that the same disease is found in different parts of Europe, with the same symptoms in general, and as the medical world has as yet not discovered any satisfactory cure of the disease, a method of separation, similar to that on the Hawaiian Islands, is universally adopted. The patients afflicted with leprosy—in Germany, they call it “ aussatz; ” in Sweden “ spetelska ” —live in hospitals built for that purpose, generally

some miles out of town. For the sake of the other inhabitants of Waimanu Valley, I would recommend the patient to be transferred to the Leper hospital on Molokai.

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Expenditures for the biennial period ending March 31st, 1870.

Leper Asylum, Molokai.....	\$26,883	53
Leper Asylum, Kalihi.....	7,150	22
Total.....	\$34,033	75

REPORT OF THE BOARD OF HEALTH, 1872. FERD. W. HUTCHISON, PRESIDENT.

* * * At the time of the meeting of the Legislative Assembly of 1870, it was hoped by the Board, and so reported by them, that "it was believed that there were then few lepers not under supervision." The Board drew that conclusion from the fact that no new cases from the Island of Oahu, either genuine or doubtful, had come to the knowledge of Dr. Hoffmann, physician to the Kalihi Asylum, for some months, and the reports of medical gentlemen and responsible Government officers from the other Islands gave the same flattering, but, as it proved, deceptive account. It was found that numbers of patients, some in the very last stages of the disease, were secreted away in the valleys which so abound throughout the group, and other obscure but comparatively safe hiding places. This was especially the case on the Island of Oahu, but the discovery of them having been made, the securing of the others was comparatively easy, as the lepers and their friends were in most cases only too anxious to point out the several spots where the others were con-

cealed. It is a surprising thing, but nevertheless most true, that many of the native Hawaiian population appear to be utterly indifferent to the danger which menaces themselves from contact and association with the lepers; it is only in the latter stages of the disease, when the sufferer becomes a loathsome and disgusting looking object, that they appear to be anxious to separate them from their homes—but in the earlier stages they will associate with them readily, wear their clothes (which are generally given up to their friends on their removal to Kalihi,) although death is in the contact, and as a rule will never take warning of the fate—which probably awaits them—from the experience of their neighbors nor from the exhortations of their friends. From the delusive nature of previous information it would be perhaps not well to indulge in strong hopes as to the future, still, the experience of the last few months may, perhaps, authorize the Board to say that, from an examination of many of the cases *now* sent to Honolulu for examination, they are found to be suffering from other cutaneous diseases distinct from leprosy, more especially syphilitic, in their secondary and tertiary forms. It is known, however, that a number of true cases are to be found in the district of Lahaina—which place has been one of the great centres of contagion; but whenever an effort is made to have them sent to Honolulu, their friends get the information and in a very short time it is communicated to all the parties interested; the cane fields make good hiding places, and a search therein becomes useless, more especially when the searchers, as is probable, are not anxious to carry out their instructions.

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During the latter part of Mrs. Walsh's term of office some difficulties occurred—in fact, a partial rebellion took place. The cause of the trouble was a want of appreciation on the part of lepers and lunas† of the

†Luna, Foreman. Luna Makai, Sheriff

duties of their several positions; still, for a time the affair was somewhat serious, anarchy was established—a prompt exhibition of authority—the punishment of two of the ringleaders and the change of the Superintendency to Captain Kahoochuli brought about a result satisfactory to the parties interested, viz: the Government and lepers themselves.

Since the last report a church, in connection with the Hawaiian Evangelical Association, has been erected in the settlement. The Roman Catholic Church is about to build another. Clergymen from both religious bodies visit the members of their flock at regular intervals, and the Board have been much pleased to assist these philanthropic and religious efforts to the best of their ability.

As very few persons, native or foreign, are acquainted with the locality and surroundings of the leper settlement founded by the Government and Legislature of the Hawaiian Kingdom, it may perhaps be well to recall in a succinct form all that has been said and reported to your Honorable body, from time to time, in regard to its situation, surroundings and its actual condition at the present moment.

Let us land on the southern side of Molokai, in the little harbor of Kaunakakai, take horse, ride over the gradually ascending plains in a north-easterly direction to high pasture lands, passing the farm of Mr. Meyer, until we arrive at the edge of the famous precipice of "Kalaupapa," 2000 feet above the sea level. This precipice we shall have to descend, for it is the only communication by land with "Kalaupapa," (the landing-place of the settlement from sea). A zigzag road has been cut down this nearly perpendicular pali, which will certainly take an old and accustomed mountaineer nearly one hour to descend. Arrived at its foot, however, and following the trail, we soon arrive at the "Flat" or landing-place, where several native houses are scattered about. On an even, good road, the Leper Settlement is soon arrived at; it is large and extensive,

surrounded by grand and imposing scenery. The papia, puhula and banana plant, give the village a cheerful appearance. Some of the houses are fenced in by stone walls, others are placed amongst potato fields or pasture lands. The view generally is picturesque; vegetation is luxuriant, the scenery is beautiful, and its whole appearance, apart from the lepers themselves, pleasant and agreeable. The first house we arrive at is the dwelling of the Luna Makai; it has a well furnished room, with apartments for stores of various descriptions, to be distributed weekly to the lepers under the rules.

A little further on, the house of the Keeper is reached. He has a neat commodious house with two rooms to himself, the other portions of the house being appropriated for stores of various descriptions, out-office for the supply of medicine, books, etc. The buildings adjoining the principal keeper's house are two hospitals (male and female) for those of the sick unable to attend to themselves—separate houses being provided for all those persons of the leper valley who require special attention in regard to diet, accomodation and medical aid—in fact, for all those too far advanced in the disease to take care of themselves.

In the quadrangle, of which the Superintendent's house forms one side, are to be found the separate houses built for boys and girls, with a special building for a school-room; an instructor for which establishment is generally to be obtained amongst the lepers themselves. There are several other buildings included here, useful or necessary for general purposes and the special control of the stock and material of the establishment.

Care is taken that the patients received here have suitable food, a number of milch cows furnish plenty of milk, morning and evening, and the food is prepared by a Chinese cook (a leper) belonging to the establishment.

The children are taught the ordinary school instruc-

tion of the islands—reading, writing, arithmetic, geography and singing.

The scene presented to a stranger on visiting these school-rooms must necessarily be a sad one, yet he cannot but reflect that it is well for the country and the whole race that these young people,—poisoned in their blood,—are taken away from the community at large. The children, with the exception of one or two, do not seem to feel their misfortune; when they leave school they act as others of the same age, running or playing their way home, apparently unconscious of the fate that awaits them.

A little distance from this central place, nearer the seaside, a little church has been built, where every Sunday a native minister, a leper himself, holds a service. It is situated on a spacious grassy ground, the rays of the sun being tempered by the cool, refreshing northerly breezes. It is well attended by the poor people for whose benefit it has been specially erected.

The houses of the lepers are scattered throughout the valley. There is a stream at the head of the settlement, and a visitor will meet numbers of lepers on an ordinary fine day, some leading horses, carrying bundles of clothes in the direction of the stream; others carrying calabashes of poi, sweet-potatoes, &c.,—in fact, the ordinary life of a Hawaiian village will be seen there in its usual routine and manners.

The houses are generally well kept and clean, (much to the credit of the lepers themselves and the lunas placed over them.) Included in the number of lepers are several half-castes, two or three Chinamen, and one European. The females are admirably industrious, making mats and other material for the internal comfort and accommodation of their cottages. The males who are able and willing to do something, work their potato fields, raise sugar cane, bananas, &c. A great change for the better has taken place amongst them during the past two years. They now raise considerable quantities of food, which supplements the sup-

plies granted by the Board; at the same time, they still *claim* equality for all, that is to say, that the able-bodied shall have the same supply issued to them as is granted to those who have lost hands, feet, and in every other respect are reduced to the necessity of having others supply their wants or dying from starvation. This evil however is gradually correcting itself.

Fresh provisions only, are issued to the lepers—five pounds of meat and twenty-one pounds of paiai per week are the ordinary rations issued from the Superintendent's Department. The meat generally is mutton, but this is varied at times by fresh beef—the product of the herd belonging to the Board, which is gradually increasing, and may be expected at no very distant day to reduce the sum now annually paid for sheep supplied to the Establishment. The ration is a large one, and exceeds that issued to the soldiers of the best supplied European and American Armies, nevertheless the complaint is chronic at Molokai as well as at Kalihi that sufficient food is not supplied to the patients. The Board, however, can fairly assert that these people are better supplied than they ever were in their own homes—a proof of the assertion may be found in the fact that many of the people living at the landing place at Kalau-papa have been anxious to make themselves lepers, and probably the whole population of that hamlet would not object to be taken under the supervision of the Board. Whoever has had experience traveling around these islands must know that there are places where the people have nothing to eat but a little poi, or a sweet potato, with a little kukui nut and salt to make a relish for the comparatively insipid food.

Whatever these people raise has been recognized as their own, with liberty to dispose of it as they like—and they have frequently sold of their produce quantities of sweet potatoes and numbers of pigs. It is well to put these facts on record for the better information of those who have sometimes been misled by story-tellers, occasionally tinctured with a certain animosity against the Institution.

Some marriages have taken place among the lepers, sterility is the almost universal result—and it is fortunate that such is the case. Within the five years existence of the Institution, and in a population of several hundred people, only two births have been reported. The first case was born dead, the other is living now, borne by a woman who shows no signs of leprosy, but her husband, with whom she lives, is a perfect leper. Some doubts have been expressed about the paternity of this child. Leprosy is more common amongst males than females; two-thirds of the lepers in Kalaupapa Valley are males and one-third females. This fact may seem strange at first, more especially to those who have given no attention to the several conditions under which the disease is or may be propagated, but the subject would require a pamphlet in itself to elucidate it even partially. Suffice it to say here, that a female suffering from the disease is more apt to transmit the poison than the male; it would even appear that they may show no symptoms themselves, yet infect their husbands time and time again. Several instances are known on these islands where women have married the second and third husband, after the first had died of leprosy, and their later partners, after a short time, shared the fate of the first.

The marks of former syphilitic disease—deformity in the face or other parts of the body—are very frequent with a great number of the patients. Signs of hereditary syphilis appear in the poor children. It is therefore not unlikely that that disease is one of the predisposing causes of leprosy. Painful observation leaves little doubt that in some families the leprosy of the young generation had its root in an inveterate constitutional venereal taint derived from the parents or grandparents.

The subject is an interesting one to medical men, but to the majority of the public a disagreeable one; it may be added, however, that more leprosy exists at those places on the islands which were most famous for their immorality in former days.

The question is still asked at times: "Is the disease contagious?" We most emphatically say, yes! Daily experience confirms this. Whole families, and those who have lived with them, member by member, becoming diseased; such being the nature of the disease, it is a terrible sight to see sometimes, on entering a native house, a leper, some relative or friend of the family, sitting among little children, and perhaps eating with them out of the same calabash, with sores on the fingers and poisonous breath. The lives of half a dozen persons are endangered by the aloha to one person who should already be considered lost. It is a poor way of showing love to other members of the family by assisting to keep such a person in the family. Still, it is done in many cases, and every obstacle is thrown in the way of the authorities when endeavoring to secure the isolation of the diseased man or woman.

We repeat again here that these people are well taken care of, and by no means unhappy.

Let us think for a moment and imagine what a state we should be in, if all these lepers, instead of living together at Kalaupapa, were running free and scattered around the islands, in the towns and villages, settlements and families. We could not go anywhere without meeting a leper; there would be hardly a valley on the islands without having lepers among its population. The consequence must ultimately be the ruin of the Hawaiian race, and the foreigner would soon be included in the catastrophe. But that would not be all, strangers not used to such sights would receive evil impressions; the opinions of foreign countries would be very different in regard to us to what they are now. The islands would be shunned on all occasions, and no vessel or stranger would enter our ports unless forced by sheer necessity, and would make their escape as quickly as possible. The conclusion to be drawn from this is that although the cost connected with the establishment is large, yet it is a matter of absolute necessity that it be continued, and the money so spent may well

be looked upon as an encouragement to the trade, agriculture and enterprise of the islands.

In Europe the lepers are collected in large asylums, in fact, prisons, many stories high, and surrounded by high stone walls. The strictest seclusion is enforced between the inhabitants of these asylums and other people, and we do not hesitate to say that the settlement of Kalaupapa will compare favorably with any institution of the kind in the world. * * *

* * * The Board have to regret the loss of Dr. Beratz—drowned accidentally in the District of Hana; he had proved himself a faithful and competent physician, was beloved by the native population and appreciated by foreigners generally. His place will be difficult to fill—the qualifications thereto being somewhat peculiar and not easily found in this community.

* * * * *

Expenditures for the biennial period, ending March 31, 1878:

Leper establishment, Molokai.....	\$26,055.11
Leper Asylum, Kalihi	5,673.01
	\$31,728.12

DR. TROUSSEAU'S VIEWS ON THE LEPROSY.

[P. C. Advertiser, July 8, 1873.]

Mr. Editor:—I have been frequently asked by some friends to write some information or other about leprosy, and the action of the Board of Health.

We always thought the least talk about it the better; action was needed in presence of the alarming spread of the disease of late years. I will explain what the action of the Board has been now that the painful part of its duties is almost at a close.

How sad these duties have been, my colleagues and myself only know. The influences brought to bear upon us have been numerous. Prayers, threats and worse have been resorted to. We may boldly say that no consideration of fortune, rank or nationality has arrested us, and our task has been achieved to the best of our ability.

Many a time our hearts were bleeding. I, for myself, as a medical man, have been far from coming in contact with the pleasantest features of humanity; well, I never in my life had to witness more painful scenes of physical and mental suffering.

On the whole, the natives have behaved very well. The poor lepers have shown courage, as have their friends also, but the amount of concealed sufferings left behind by the energetic measures of the Board, God only knows. Let natives and foreigners know we have had a full share of sorrow. We must also render full justice to His Majesty. Not in one case has he tried to interfere with the action of the Board, even if a friend or a relative had to be sent away.

Since the first of March, I have examined over one thousand people. Four hundred and ten cases have been sent to Molokai, two hundred and forty men and one hundred and seventy women, all natives and half whites, with the exception of six foreigners, one American, one Frenchman, one Englishmen, and three Chinamen. In no case, has a relative or friend been allowed to follow the leper.

The number on Molokai is now about 800, say a little over two per cent of the population.

We may positively declare that by this time there are not over fifty cases at large in the Hawaiian kingdom. They will be gradually discovered. Some cases are sure to make their appearance for the next few years, but we hope that if we do not thoroughly eradicate the disease, we shall keep it under such control that it will cease to be a cause of depopulation. Now allow me a few remarks about the disease.

Is leprosy infectious or even contagious in the sense of the word; that is, by contact mere and simple? I emphatically say no.

I am supported in that opinion by the whole medical world, and by personal experience.

Leprosy cannot be communicated like cholera, yellow fever, small-pox or typhoid fever.

But provided there is a predisposition in a person, that person may contract the disease by various means, —cohabitation, smoking out of the same pipe, eating or drinking with the leper, and so forth.

Therefore, there is no danger for the foreign population, and the spread of the disease of late years should not destroy in any way the universal reputation of our most healthy climate. As far as the native race is concerned, it is quite different.

The promiscuous habits of the natives, and their renowned hospitality are such that they are pretty sure to catch the least contagious of diseases.

Isolation, and *thorough* isolation, as the Board understands it, and is carrying it out, will be one of the most efficient means of arresting the progress of the disease.

The most obvious predisposing causes are: syphilis and its nearest cousin scrofula, also hereditary. A want of variety in the diet; mostly the use of salt provisions, habitation in ill ventilated or dark houses may also be blamed. The foreigner as a rule is not exposed to such influences, or rather to a less degree than the natives.

In fact, leprosy is not only a skin disease, it is what we call in medical parlance a *cachexia*. This means a debilitated state of the blood, under a morbid influence.

Syphilis, scrofula, intermittent fever generate also that peculiar state of the blood which produces *cachexia*. Persons already suffering from one *cachexia* will be more liable to suffer from any other.

I always abstained heretofore from expressing my personal views on the subject, but I am confident they will be shared by those who have in the study of the

disease gone beyond the range of superficial observation. The public health as far as foreigners are concerned is perfectly safe.

To conclude, I will state that a great deal has to be done yet. The Board will have to devise preventive and sanitary measures, without which the disease would not be eradicated.

Also impress upon the natives a salutary dread of the disease, so that no case should be concealed.

Use the utmost exertion to rescue those cases in Molokai who might perhaps not be beyond recovery.

A great deal has been written lately in the local papers about the treatment of leprosy. As the medical man of the Board, I consider it my duty to give a general answer.

If incipient cases can be cured,—and my impression is that they may in some cases,—let the public well understand that nothing will be neglected.

The treatment at all events, must last for months, or even years, and could not be carried out before isolation was completed.

It will have to be discussed with my brother practitioners in Honolulu, and will be openly and faithfully executed.

The medical world is sufficiently well represented in Honolulu by men of all nationalities, without any necessity for us to seek for foreign assistance. Any medical man who respects himself will never say, “I will cure leprosy under the tropics.” He will say, “I *may* cure it,” and then he will use known remedies and expose his plan of treatment.

I say, in full confidence, that what the combined efforts of the medical men in Honolulu will not do, need not be tried by anybody else. I, for my own share, have little confidence in those who either offer to sell their secrets, or require inducements, without which we are willing to try our best.

I thank you, Mr. Editor, for the valuable space you

have been kind enough to allow me to take up in your paper.

Believe me to be yours, most obediently,

G. TROUSSEAU,
Physician of the Board of Health.

P. S.—I beg to apologize to the readers for any imperfection in the language. My excuse will be my nationality.

Honolulu, July 8, 1873.

EXTRACT FROM RECORDS OF BOARD OF HEALTH,
MARCH 1, 1873.

A discussion ensued with regard to the possible extermination of the disease, Dr. Trousseau strongly urging that the only method, at all likely to be successful, was the immediate, energetic, and to a certain extent, unsympathetic isolation of all who were afflicted with the disease, and even that would require a generation in all probability to prove successful. It was reported that 115 kokuas, or helpers, were at present at the asylum who were not lepers, and yet were virtually supported by the Board of Health.

REPORT OF THE BOARD OF HEALTH FOR 1874, HER-
MANN A. WIDEMANN, PRESIDENT.*

In 1865 the Legislature passed an Act to prevent the spread of leprosy. Ever since the Act has been in force the Board of Health has done its best to seclude the lepers, as ordered by the Legislature. The Admin-

* First year of the reign of His present Majesty King Kalakaua,

istration appointed by His late lamented Majesty Kamehameha I., was strongly urged by public opinion not only to carry on the measures of their predecessors, but also to use their best efforts and carry out to its full extent the law of 1865.

After enquiries made in the beginning of 1873, it was ascertained that at least four hundred confirmed lepers were mixing amongst the healthy part of the population, all over the islands, the most contaminated centers being Honolulu and Lahaina. According to the spirit of the law, that you yourselves have made as stringent as possible, the Board of Health commenced its work, and from the beginning of 1873, to the present date, have had to send over five hundred confirmed lepers to Molokai. The members of the Board are under the impression that unless the law be carried out thoroughly, it will fail to effect the object intended by the Legislature, viz: the arrest of the most frightful disease known. It must also be the opinion of every one that half-measures only cause an enormous amount of expense, and bring no result.

You must be informed that the duties of the Board of Health with regard to the lepers have been most arduous and heartrending. They have been fulfilled with a stern feeling of responsibility, without any consideration of person or rank, and only in obedience to a necessary law, at the cost of much fatigue, annoyance, and even personal risk. The feelings of the Board are with our unfortunate isolated lepers and their families: but what is to be done except trying to make them as comfortable as circumstances will permit? Have we not principally to look to the healthier part of the population, who, ignorant of the danger, allow themselves and their children to be contaminated forever? Seclusion is ordered by law: seclusion is the only way which in olden times, as well as in our own days, has been found to be of any use in arresting the progress of the disease, or even in eradicating it. Seclusion, and strict seclusion, has to be maintained if you want to save the balance of

the Hawaiian race. The Board has effected this to the best of its ability. Some more lepers are known to us about the islands. As soon as you will have enabled us to support them, they will be gathered together and sent to Molokai to join their fellow-sufferers. This done, there will only be now and then a few cases making their appearance, and the disease will be kept in check, until time, improvements of habits, diet and general measures of hygiene put a final stop to it, as we are in hopes they will.

The gathering together of the lepers was not the only trouble. The most difficult point has been to give them ample accommodations in Kalawao, and to provide for their own wants. For this the Board had to rely on its own resources. On a visit made by two members of the Board early in 1873, it was ascertained that the building accommodations in Kalawao were inadequate to the wants of the increasing population; also a large number of healthy natives in Kalaupapa had retained possession of kuleanas* on the Board of Health's land, with numerous good houses. The Board came to the conclusion that if these kuleanas could be bought out at a reasonable price it would answer two purposes: *First*, Building accommodation. *Second*, A stricter isolation of the lepers. Mr. Meyer, the Board's agent in Molokai, managed to carry out the almost complete purchase of the kuleanas, to the satisfaction of the owners and of the Board of health.

* * * * *

The settlement, or rather the hospitals, stores and central buildings were without water accommodation. The board undertook to lay down a pipe, six thousand feet in length, with taps at convenient distances, and by this time a constant supply of good fresh water runs by the hospital, to the benefit of the leper population. A store to supply many little private wants of the lepers was asked for by the community at Kalawao. It has

* Kuleana—A plot of land held in fee.

been established on a self-supporting basis. The lepers can buy goods in the store at cost price, increased only by a small percentage to cover the expenses of carriage and store-keeper's salary. It has hitherto, and will continue to pay its own expenses. It is solely an accommodation for the lepers.

The Board had next to provide for the daily wants of the increased community. This was certainly a more pleasant task, but by no means less difficult. Eight hundred people had to be supplied with food, and this has been the daily pre-occupation of the members of the Board. The rations fixed by the previous Administration had to be maintained. Every leper receives per week twenty-one pounds of paiai and five to six pounds of beef, or when on account of difficulties well known to those acquainted with the place, the provisions of beef and paiai cannot be landed, the Board keeps in store a considerable supply of salmon and rice, and the rations then consist of nine pounds of rice, one pound of sugar and three to four pounds of salmon per week. It has been impossible to get any cattle down by the pali, so that all the year we have been depending on beef per sailing vessels and the "Kilauea."

Notwithstanding the increased number of lepers, the difficulties of communication, etc., there has not been one instance of want of food at the settlement. * * * However, complaint is made on Molokai as well as at Kalihi, that sufficient food is not supplied to the patients. The Board can assert that in a material point of view, these people are better off in Molokai than most natives of these islands, and also better off, with very few exceptions, than they ever were in their own homes.

A very important measure has been started by the Board, tending to make in time the establishment almost self-supporting as far as paiai is concerned. Under the intelligent direction of the present luna, W. P. Ragsdale, a number of natives, old residents among the lepers, and whom the Board thought wise to keep as

kokuas, have entered into a contract for the cultivation of kalo on half shares in the Waikolu Valley. One-half of the kalo cultivated by them has to be converted into paiai, and belongs to the Board; the other half belongs to these natives, and they sell it to the Board in form of paiai at the rate of twenty-five cents per bundle. There is some difficulty to make them adhere to the contract, but the energy of Mr. Ragsdale will probably overcome the difficulty. The intention of the Board is also to raise stock on the lands belonging to it, so that a constant supply of beef should always be on hand.

A large number of kalo patches have been planted, and are now promising a fine crop. In a few months the Board will begin to reap the benefit of such an important enterprise. It will also secure a much more regular supply of food to the lepers. The usual supplies of clothing have also been delivered to the lepers, so that in all respects they have been made as comfortable as possible. Two members of the Board have paid regular visits to the settlement, and have never found any dissatisfaction among the people, or any foundation to their generally most frivolous complaints.

The lepers, like other people, are subject to ordinary ailments. These had been hitherto almost entirely neglected. The physician of the Board, to his great sorrow unable to cure the disease, has paid the greatest attention to their ordinary ailments and to the relief of their miserable condition. Mr. Williamson, late superintendent at Kalihi, a white man, and himself a leper, has been appointed by the Board, as overseer of the hospital and in charge of the medicines. He constantly receives medicines and instructions from the physician of the Board, and applies them to the great satisfaction of all parties. Meanwhile the Board of Health is receiving constant information from all parts of the world on the treatment of leprosy. Experiments are carried on constantly on patients at Kalihi, and on very incipient, or rather doubtful cases, at their own homes.

Though some patients have certainly improved a great deal under careful treatment, we cannot for the present state any one case of cure. All those reported as having been cured by native or Chinese doctors had been examined and dismissed as non-lepers. The highest science of the world, after continuous and arduous study, knows yet very little about leprosy. Is it likely that perfect strangers to the art of medicine would succeed where the princes of the art have unfortunately constantly failed? Notwithstanding these discouraging facts, the Board will continue to be regularly informed of the progress of medical science in connection with leprosy, and will never fail to give the fairest chance to any reasonable treatment.

Mr. W. P. Ragsdale,* who some months ago gave a remarkable example of self sacrifice in going of his own accord to Molokai, is the present superintendent of the Asylum. A more active and efficient man could hardly be found. The Board declares to your Honorable Body that Mr. Ragsdale deserves the highest praise for the manner in which he accomplishes his difficult task.

* * * * *

The last census has shown a steady decrease of the population since 1866. The Board of Health does not neglect to investigate, as thoroughly as possible, the causes of depopulation. Some of them ought to be considered, and the most important of all is the existence of syphilis. You have, in 1860, passed a law called "The Law to Mitigate;" it is the intention of the Board of Health to advise the new Administration, appointed by King Kalakaua, to enforce the existing law, and to test if the proper working of it will not reduce the number of natives suffering from syphilis. The traveling physicians on the different islands, and the physicians in Honolulu practising among natives, report that the disease is on the increase. Syphilis may be considered as the most important cause of the de-

* A half white, who died a leper, at Molokai.

population of these islands, and also one of the most predisposing cause to leprosy. If after two years' experience the law proves insufficient, it will be the duty of the Board of Health to propose to your Honorable Body some new regulations.

Amongst the other causes of depopulation are some that moral influence only can counteract. It lays with the more enlightened class of Hawaiians, with the foreigners mixing with the natives, and with all church members to impress upon the more ignorant classes the importance of chastity in young girls, of better morals in later life, of the moderate use of awa, and the danger of the use of opium and intoxicating drinks. No regulations, we think, can do much against those evils, all of which tend more or less to unfruitful marriages.

* * * * *

Expenditures for the biennial period ending March 31st, 1874.

Leper Establishment, Molokai.....	\$56,565.24
Leper Asylum, Kalihi.....	6,872.52
Total.....	\$63,437.76

STATEMENT ON LEPROSY AND RESOLUTIONS ADOPTED
BY THE HAWAIIAN EVANGELICAL ASSOCIATION,
HONOLULU, JUNE 10, 1873.

The disease of leprosy in these islands has assumed such an aspect that it becomes our immediate duty to determine our course of action as pastors and teachers respecting it.

This loathsome, incurable and deadly disease has fastened upon the vitals of the nation. Although we hope and believe that it is not yet too late, by the use

of sufficiently stern and vigorous measures, to dislodge its fatal hold, that hold has become fearfully strong. The numbers already known to be victims to leprosy, the still larger numbers who are undoubtedly infected, the steady, remorseless activity with which it is extending, all tell us, with ghastly assurance, that unless remedial measures are used more effective than have been hitherto applied, our Hawaiian people will become a *nation of lepers*.

* * * * *

Our great peril is from general ignorance on this subject among the common people, and from their consequent apathy and perversity. They refuse to separate their lepers from them. They eat, drink and sleep with them. They oppose their removal and hide them. They listen to the voices of evil-minded men who raise an outcry against the King and his helpers, when they strive to root out the evil thing.

* * * * *

Therefore, *Resolved*, That every pastor and preacher of this Association, be instructed to preach frequently and particularly to his people upon the duty of isolating their lepers, especially as illustrated by the Mosaic law in the thirteenth chapter of Leviticus; also that he diligently use his personal efforts to lead the people in this duty.

Resolved, to set apart the 18th day of July next, as a day of fasting, of repentance before God for our sins, and especially for those sins which promote the spread of this disease, and also as a day of Prayer to God to strengthen the King and the officers of the Government in cleansing the land of this disease, and to turn the hearts of the people to help in this work of saving the nation.

Signed by Titus Coan, D. B. Lyman, W. P. Alexander, S. E. Bishop, J. P. Green, A. O. Forbes and about forty Hawaiians.

REPORT OF THE BOARD OF HEALTH, FOR 1876, SAM'L G. WILDER, PRESIDENT.

Sir:—As required by law, the Board of Health make to the Minister of the Interior the following report:

The Legislature of 1874 made an appropriation of six thousand dollars, expenses of Drs. Powell and Akana, for curing the leprosy. These parties were offered every facility to try their skill and prove their ability to make good their assertions. On the part of Dr. Powell, the President of the Board received an insulting letter. He, the so-called doctor, declining to make any trial and he soon after left the country.

The Chinese doctor accepted the offer of the Board, and was, at the expense of the Board, sent to Kalawao. Six patients were placed in his care and for six months he gave them medicines, at which time Dr. Akana claimed to have cured one of the six; the patient was brought to Honolulu, examined by a number of physicians, and returned to Kalawao as a confirmed leper. This ended Dr. Akana's attempt to cure leprosy.

Upon careful consideration the Board decided that the keeping up of Kalihī Hospital was not advisable; the situation was such that isolation of the afflicted was impossible; that all attempts to cure any patient afflicted with leprosy had failed; that all parties afflicted with leprosy should at once be sent to Molokai: to this end a suitable building adjoining the Station House has been erected, where the sick are retained until the physicians decide they are lepers or not.

This arrangement reduced considerably the expenses of the Board.

Report of the lepers admitted to Leper Asylum, Molokai, from January 6, 1866, to March 31, 1876, (ten years):

Males.....	991
Females, including children	579
	— 1570

Total Deaths from January 6, 1866, to March 31, 1876:

Males.....	569	
Females, including children	303	
	—	872

Total Number of Lepers, living March 31, 1876:

Males.....	422	
Females, including children	276	
	—	698

Included in the above total number of admissions were 18 foreigners, as follows:

2 Germans, 2 Americans, 1 Englishman, 1 native of Mauritius, 12 Chinamen,—11 males and 1 female.

From the above number there have died: 4 Chinamen, 2 Germans, 1 Englishman, 1 American.

Living at this day: 8 Chinamen,—7 males and 1 female; 1 American, 1 native of Mauritius.

The Board are not prepared to advance any new ideas or theories as to the cure of leprosy, at the same time they feel assured that the disease is under control; and that another two years of active action like the past will have isolated the afflicted and checked the disease.

* * * * *

This law (the Act to Mitigate) is not directly under the supervision of the Board, and we would recommend Your Excellency that the law should be so changed as to be placed directly under the control of the Board of Health, and otherwise amended that no party should be imprisoned except by the authority of some Court. The Board are firmly of the opinion that in the carrying out of this law, depends the checking of leprosy.

* * * * *

During the two years past there has not arisen any trouble at Kalawao; there has been at all times sufficient food. The Board have not on file a single complaint made by any of the sick. * * *

The Board are confident that the number of patients at Kalawao will now decrease; that no extraordinary expenses are expected; that the supply of taro and cattle is such that we can safely figure for a lessened ex-

penditure than for the past two years; no more houses will be necessary; the number now owned by the Board give to *all* comfortable houses.*

REPORT OF THE BOARD OF HEALTH, FOR 1878, J. MOTT SMITH, PRESIDENT.

This settlement, which was established in 1866 for the segregation of the unfortunate victims of this incurable disease, remains still a necessity for the nation. The Board has endeavored for the past two years to carry out the laws regarding the lepers with fidelity, and, however harsh it may appear in individual cases, there exist sufficient reasons to persevere in the measures which have been hitherto pursued. The public health, as well as public policy, demand continued effort in this direction, and the Board therefore ask for the appropriation necessary for the purpose.

* * * * *

The number of lepers living at Kalawao, April 1, 1878, under care of the Government is 692.

The great rise in the price of beef, poi, rice and other articles of food furnished to the people of the settlement during the past year, has made it difficult to keep the expenses within the appropriation. Prices are not likely to abate in the coming two years, yet the Board hopes to maintain the asylum at about the same cost as heretofore, and therefore has not asked for any increase of the appropriation.

The Board spare no pains in looking after the well-being of the lepers and in providing for their wants. It may be affirmed that the settlement is truly a refuge for the diseased and distressed, and that they are there,

* Frame houses, big and small, 129; Grass houses, big and small, 171. There are 5 or 6 from the above lot belonging to private parties.

more comfortably situated than they can be elsewhere. They are wards of the Government, have food, raiment, lodging and medicines provided to them, and are not dependent upon perhaps unwilling or poor friends or neighbors, to whom they have become a burden or perhaps objects of fear.

An effort was made, some months since, by the Board, to secure the residence of a physician at the settlement. An arrangement was entered into, but it was broken off, and up to this time no medical man has been found willing to go and reside there.

The death of the local superintendent, Wm. P. Ragsdale, in February last, deprived the Board of an officer whose management of the settlement contributed greatly to the order and quiet which has become established there.

Expenditures for the biennial period ending March 31, 1878:

Leper Settlement	\$59,674.62
Less net sales of hide, tallow, etc	2,140.29
	\$57,534.33

REPORT OF THE SPECIAL SANITARY COMMITTEE ON THE STATE OF THE LEPER SETTLEMENT AT KALAWAO, 1878, WALTER M. GIBSON, CHAIRMAN.

To the Honorable G. Rhodes, President of the Legislative Assembly:

Your Special Committee appointed by the Honorable Assembly to enquire into the working of the Acts constituting the Board of Health, and for the prevention of the spread of leprosy, beg to submit a report of their visit to the leper settlement at Kalawao.

The lepers of the Kalawao Settlement were assembled at Kalaupapa in large numbers, and greeted the committee in a kindly and impressive manner. The chairman, Walter M. Gibson, and members of the Committee addressed the unfortunate people stating the object of the visit, to obtain fuller and more precise information for the Legislative Assembly and for the nation in regard to their condition, with a view to measures of amelioration if needed.

A gift of one hundred dollars from Her Majesty the Queen Dowager was placed by the Chairman in the hands of Rev. Father Damien to be distributed according to his judgment among the most needy of the lepers.

After a short enquiry it was deemed best to carry on the investigation at the Kalawao Hospital; and your Committee and physicians in company, being provided with horses, rode to the hospital, distant about three miles from the Kalaupapa landing.

At the hospital there were assembled several hundred lepers, and they were distinctly and repeatedly invited, as had been done at Kalaupapa, to make complaint of any grievances they suffered under,—and it was announced by the Committee, that if any one felt that he or she was wrongfully detained in the settlement as a leper, such person was invited to come forward and be examined by the accompanying physicians,—being assured of the protection and kindly disposition of the Committee.

Your Committee listened patiently to the complaints and statements of over thirty lepers, and append herewith a verbatim report of their several wants and grievances. They visited the wards of the hospital. They examined the dwellings and manner of living of lepers residing outside the hospital. They visited and made enquiries at the settlement store. They were present during the butchering of animals in the slaughter-house. They witnessed the digging of a grave by lepers, and the burial of a leper. They noticed the animals of the set-

tlement, and in fine observed in a stay of nearly two days, as far as it was possible, every particular relating to the condition of the lepers, and the administration of the Board of Health at Kalawao, and the Committee present as the result of their observations the following statements and recommendations.

The situation of Kalawao settlement seems very desirable. A table land or bench, with an area of about 8 square miles, and an elevation of 100 feet, is bounded on one side by the ocean, and landward by a stupendous and almost insurmountable wall of bold bluffs, rising at the pass to the height of 2,000 feet above the sea. This lofty back-ground of the settlement arrests the trade wind clouds, and causes a frequency of showers, and a luxuriance of verdure, even upon the rocks in the sea, such as is hardly witnessed at any other points along the coast of the islands. Therefore Kalawao presents scenery of great natural beauty, and would be regarded anywhere as an attractive place of residence.

However, your Committee will observe here, that this beauty and verdure is associated with a great deal of moist atmosphere, and makes it only the more important that habitations, especially for invalids, should afford a complete shelter against any inclemency of weather. Of the houses visited by your Committee, many were commodious and well built of lumber, and equal to the average tenement constructed by Hawaiians on their own lands; but a large number are too small and of too light construction to afford a proper shelter. In a hut 10ft. by 8ft., visited by your Committee, four lepers made their home. This hut was constructed of hala or pandanus stems, leaned to against one another, merely forming a roof without walls, which was covered with a thatch of partly ferns and sugar cane blades. Such a covering must be, as was stated, pervious to the winds and rains,—and it is the opinion of the Committee that patients who cannot, or will not provide a better shelter for themselves, should be pro-

vided with lodging in Hospital grounds under the immediate supervision of the superintendent of the settlement.

It is proper to state here, that of 690 patients now residing on Kalawao lands, not more than sixty are cared for within Hospital grounds, and the main body of 630 lepers live in cabins or huts, chiefly built by themselves, of material which they have purchased and shipped to the Settlement; and it is to be observed that the lepers have only consulted their own fancies or tastes in the selection of situations or construction of dwellings: so that, whilst some are well situated and commodious, others are entirely too small, badly constructed, and in unfavorable situations. Farthermore, in many huts not a sufficiency of matting was found. Not more than two, and in some cases only one mat, separated the invalid from the hardness of a board floor, or the dampness of a dirt floor.

As much complaint was made by lepers in respect to insufficiency of food, your Committee gave especial attention to this matter. They understood from the assistant superintendent, Rev. Damien, that the regulation supply of food, is one bundle of taro, to weigh twenty-one pounds, along with six pounds of beef, for one week. The committee saw some bundles of taro which weighed fully twenty-one pounds;—but it must be observed that this was the wrapping of ki leaves;—and as the bundle of taro prepared and sold by Hawaiians, varies, as is well known in weight: it may be, as stated by Keoni Kaahaihanu, one of the lepers, that sometimes the bundle of taro only weighed about sixteen pounds, and when divested of three or four pounds of ki leaves, will leave only twelve or thirteen pounds of taro, which would not be sufficient food for a Hawaiian with an ordinary appetite. J. H. Napela, once acting superintendent, said that bundles often fell short of weight. And your Committee are of opinion that six pounds of beef, as cut by the butcher, with a certain proportion of bone, is rather a scant supply of animal food

for one individual for one week. The supplementary articles of food, rice and bread, which are furnished in case of interruption of supply of taro, were examined and found to be of good quality. The assistant superintendent Damien stated that either nine pounds of rice or seven pounds of hard bread, was furnished as a week's ration in the stead of taro.

In respect to the clothing of lepers, your Committee were informed by several lepers, and among others, by Superintendent Summer, that the annual allowance was a "clothing ration," or order for \$5.75, supplied at the leper store, which is under the management of the agent of the Board of Health. Your Committee visited the store, and enquired into prices of articles most needed by the lepers, and quote as follows:

Best denims, per yard.....	40 cents
Denims, inferior quality.....	30 "
Brown Cotton	15 "
Prints	18 to 20 "
Tobacco per pound.....	50 "
Soap per bar	25 "
Matches per bunch.....	25 "

Whilst some of these prices are fair retail rates, others are very high, especially of staple articles most needed by lepers; and it is the opinion of your Committee that the clothing ration of \$5.75, can furnish at these prices, only a very scant annual allowance of clothing; and they are furthermore of the opinion that the clothing ration of lepers should be procured for them at wholesale rates, and the Government provide for the expenses incidental to purchase, freight and distribution. According to the Report of Board of Health, lepers were provided with clothing during the late biennial period to the amount of \$9,862.32, which amount must be largely in excess of cost.

Among the complaints laid before your Committee, it was stated that neither lamp oil, soap, or salt were furnished gratuitously to the lepers of the settlement, and that all these articles had to be purchased with their own money at the settlement store. Complaint also

was made that neither bucket or bowl, nor culinary vessel or utensil of any kind was furnished to the lepers; and your Committee observed at the hospital a notable deficiency in respect to bathing vessels, as only three medium sized bathing tubs were provided for the use of about sixty patients, usually in a filthy and excoriated condition. But in this connection your Committee are pleased to mention that plenty of good water is supplied by pipes, and that there are many hydrants or taps in convenient places for the distribution of water throughout the settlement, and at the hospital buildings.

Your Committee gladly notice the salubrious situation of the hospital grounds at an elevation of about one hundred feet above the level of the sea; and noticed that the several wards for the very sick, and the storerooms were kept in proper order. But your Committee regret at the same time to notice the small supply of bedding or clothing of confined lepers, as some showed to your Committee a tattered remnant of a blanket as the only covering. And in the hospital dispensary there was no adequate supply of medicines for such an assemblage of sick people, and no suitable liniments or disinfectants; nor a strip of lint to help cleanse or bandage the sores of the sufferers.

During the stay of your Committee at the settlement, a leper died and was buried. Your Committee observed the digging of the grave in this instance, and noted as stated by Kaapu and other witnesses that lepers in a very crippled state were obliged to dig graves. Kaapu, took part in this work, had lost several joints of his fingers, as will be seen in photograph No. 10, and the others who assisted him were equally unfit for work of this kind. Yet as stated by Kaluakini, and others, if any leper refused to dig a grave when called upon, he was denied his weekly ration of food. In this connection your Committee were informed as stated by Puna, and others, that lepers have to pay for their own coffins, and have formed a coffin association in order to provide a common fund for their proper interment; and these

sad creatures get up as shown by the register of the hospital, "coffin feasts," on which occasion money is contributed to provide for a decent termination of their woes.

Assistant Superintendent, Rev. Damien, stated that two dollars was the price of a rough board coffin, and that many deceased lepers, who had not left behind them this amount of worldly goods, were buried without a coffin, and in one instance he had witnessed at Kalawao portions of a corpse rooted up out of a shallow grave, and devoured by hogs. At the present time, the Reverend Father has a large burial ground adjoining his church well enclosed, in which deceased lepers, whether of his communion or not, are decently buried.

In respect to the deceased lepers, your Committee were informed by Keoni Kaahaihanu and Superintendent Sumner, that in case of effects of deceased, if of a value not exceeding five dollars, were presented to friends of or attendants upon a dead leper; but if above the value of five dollars, the effects were sold at auction in the settlement, and the proceeds were forwarded to the agent of the Board of Health to be transmitted to the heirs at law. Many small estates of lepers had thus been forwarded. The lepers at the settlement urged upon the attention of your committee, that inasmuch as they were regarded as civilly dead, and entirely cut off from their former homes and people, that the immediate friends of and attendants upon a deceased leper should possess the effects left behind; whether large or small.

The lepers complained to your Committee that there was no proper administration of law in the settlement. They complained of the arbitrary proceedings of the present, and of a former superintendent:—such as confining a leper with ball and chain, for no other offense than running or attempting to run away, or confining with irons for small offenses or breaches of the peace; or enforcing labor and imposing fines and penalties for

non compliances. In this matter, your Committee are of opinion, that a body of people, brought together like this unfortunate community must needs be subject to an authority with discretionary powers, but all the circumstances warrant them in saying and recommending that this authority, if possible, should only be vested in the hands of a kind and able administrator of large experience, who should also be a physician of repute.

A large-minded, philanthropic, energetic, professional superintendent or governor is the great want and necessity of the unfortunate community at Kalawao. Superintendent Sumner, a feeble and unhappy leper himself, is utterly inadequate. Assistant Superintendent Damien is a devoted and heroic priest, who has voluntarily sacrificed his young life for the welfare of the lepers. But his spiritual duties necessarily engross the larger portion of his attention; and it would seem to be a pity to impose the details of secular work upon such a man, and interrupt his holy work of mercy in consoling his wretched parish. Therefore your Committee express the hope, that such provision will be made by the Government, and such inducements will be offered, as will ultimately result in securing the valuable services of the superior and skilled official now needed at Kalawao.

The presence of such a man is pressingly needed to discern and properly treat the different conditions of the afflicted; to provide for social and moral order; to combine the functions of judge and executive; to regulate the construction and situation of habitations; to organize industries; to look to details of the living, and to administer for the dead; and in a word, there is needed a priest, a chief and a physician all in one man at Kalawao, and such a man should be sought for.

Your Committee will observe here, that this little kingdom has not been backward in meeting this great affliction. Certainly a small nation of 56,397 souls that provides in two years \$59,674.42 for only one portion

of its sick, is well vindicating its name and fame as a humane and civilized community; but as your Committee believe that still more can be done, as more of help is still needed, they recommend that provision be made, not only for the establishment of an eminent physician and man of ability to reside part of his time at Kalawao; but that provision also be made for a medical staff co-operating with and under him, to reside at Lahaina, Wailuku, Hilo, and other points in the islands.

It is manifest to your Committee that the terrible malady of leprosy presents a great variety of phases, some more or less subject to the influence of medical treatment; and it is simple humanity and justice to say that any individual suspected of, or presenting any indications of leprosy, should have the opportunity of careful medical treatment at his or her own home, and should not be condemned as an incurable and sent to Kalawao, except on the decision of a medical board or court of physicians. Your Committee must mention in this connection, that even the poor unfortunates of Kalawao have not been rendered so callous by the horrors of their situation, but that they remonstrated to your Committee against mingling in the same dwelling of apparently sound persons, freshly arrived at the settlement, with utterly diseased and loathsome cases. Father Damien commenting upon this point, stated to the Committee that the saddest feature of the settlement, was the intermingling of all conditions of the diseased, and the promiscuous intercourse of the sexes.

And here, your Committee are led to make a remark on the subject of contagion. According to all the indications of leprosy in Hawaii, contagion is apparently remote, and perhaps impossible in some cases. Father Damien is an illustration of this statement. He has been in the settlement a little over five years, and has mingled with and served the lepers under the most revolting circumstances, and yet he is as sound in health as when he first arrived; yet it may be, as is sadly supposed, that the seed of leprosy are implanted in his sys-

tem. Another instance of apparent non-contagiousness is the case of Luka Kaaukau, a healthy woman, who has been living with her leprous husband Hao for twelve years in the settlement. The man is one of the most frightful illustrations of the erosions of leprosy, as he has not a joint of a finger or toe left,—his limbs presenting only distorted, ulcerated stumps, and he is only a helpless trunk of a man. For over four years the devoted wife has put every particle of food into his mouth. He appeared a very intelligent man, and spoke very thoughtfully to your Committee about himself and his fellow sufferers. He said that many lepers in the settlement would have perished ere this, were it not for the faithful help between parent and child, husband and wife, brother and sister, and between friend and friend. He had wanted his wife to abandon his wretched carcass long ago, as she was sound and well, and might go back to her friends; but Luka said that she was content and happy to wait on the man she loved until his last moments, rather than go back to her friends; and your Committee take pleasure, whilst noting this instance of non-contagiousness, to place it on record also, as an illustration of fidelity and devotion in Hawaiian character.

The discussion of the contagion or non-contagion, and other features of the disease of leprosy are probably not within the province of the duties of your Committee; but they will refer to one subject in this connection, and often commented upon, and that is the health of animals, especially associated with the people. At the leper settlement, your Committee made frequent request to have any sick dogs brought before them, but notwithstanding much enquiry none were produced; and your Committee will say that of the large number of dogs, they saw running about the settlement, all seemed in a very plump condition, and very healthy, and all other animals, horses and cattle, running on the lands of Kalawao seemed in superior condition.

The question of contagion is rendered all the more

difficult of solution in view of the apparently healthy children, twenty-eight in all, born in the settlement. The Committee observed in a hut a leprous woman named Makahiki, who presented all the appearances of a badly diseased, incurable case, and yet had her fine, healthy child living with her, a bright looking little boy about two years of age. Her husband, Keoni Kahiapo, a healthy, intelligent looking man, with no appearance of any taint of leprosy about his person, said he had accompanied his wife on account of his great love for her; he had been with her in the settlement about five years, and would remain with her as long as she had breath. Your Committee are happy to notice this as another instance among Hawaiians of fidelity and devotedness, such as is an honor to the human race.

The situation and salubrity of this settlement are no doubt all that could be desired for well people, and can be made subservient to the comfort and welfare of invalids. But your Committee see clearly that many reforms are needed. Some of these reforms they have pointed out in connection with the dwellings, and food and clothing of the lepers, and medical provision for the sick in other respects. And in addition, they wish to speak of reform needed in the distribution of food. As stated to them, and as witnessed by their own observation, feeble lepers, with excoriated feet have to travel several miles to secure their ration, the bundle of taro, which is delivered from a boat on a shingly beach, often difficult of approach on account of the high surf which beats upon the northeast coast of Molokai. This difficulty in distribution might, to all appearances, be obviated at small expense by the employment of pack animals, and of a wagon or ox cart. And sick people should not be obliged to expose themselves, as was stated to your Committee, to the frequent rains of this settlement, whilst waiting for their ration of taro or of beef. And in no instance should the meat of animals which have died by accident be served out to invalids—as stated by Kekanchailua, and confirmed by Father

Damien. The latter says that quite recently, when 100 head of cattle were driven over the pass in the bluffs into the settlement, twenty head were killed by falling over precipices, and that the meat from the carcasses brought in from the ravines was served out to the lepers. As great complaint was made about want of light and cleanliness, your Committee would recommend that lamp oil, and soap, whitewash and disinfectants should be served out to these poor people gratuitously.

And your Committee are of opinion that all this can be accomplished without much increase of the appropriation. The nation has thus far combatted this great malady in a brave and generous spirit, and it must continue to do so, at the same time, that it looks to the Government to bring about all those reforms, which shall prevent the unnecessary dragging away of people from their homes, and shall furnish to the unfortunate lepers living at Kalawao all the necessaries and comforts for which their humane and generous countrymen have provided.

The government of this settlement is at present rather anomalous, and this is a matter, which in the opinion of your Committee should command the most earnest attention of the Assembly. As according to the present laws, the regulations of the Board of Health have the force of Statutes, it will be seen, that the administration of the affairs of the settlement, may combine judicial and executive powers, and the superintendent of the Board might according to law dispose of not only the liberty of a subject at his will, but possibly of life, if he deemed it necessary and had royal sanction. These great powers and prerogatives may not have been abused; but your Committee are of opinion, that the authority of the laws of the Kingdom should be directly represented in this settlement by regularly appointed officers; or it might be more expedient that the superintendent of the settlement, should be invested with the powers of a magistrate, and be assisted by a

proper executive. Hawaiian lepers, like all other Hawaiians are law abiding in their disposition; and therefore they require, when subject to any discipline, regulation, or repression, that all should be done in accordance with the sanctions of the general laws of the land.

Our sad national calamity will command the attention of the civilized world. If dealt with in a careless, indifferent and niggardly spirit, and presenting in consequence only a spectacle of terrible human woe made more miserable by mismanagement, it will sink us in disgrace; but if met and dealt with in a spirit of the highest humanity, and of the largest Christian charity and devotion, then will our great misfortune prove at last a blessing, and redound to the highest glory of our Hawaii nei.

WALTER M. GIBSON, *Chairman*,
 WILLIAM O. SMITH,
 JOSEPH NAWAHU,
 S. KAANAANA,
 WM. H. HALSTEAD,
 J. K. KAOLIKO,
 P. KANOA,

Special Sanitary Committee.

REPORT OF N. B. EMERSON, M. D., MEDICAL SUPER-
 INTENDENT OF THE LEPER SETTLEMENT, KALAWAO,
 MOLOKAI, AND SANITARY INSPECTOR OF THE
 BOARD OF HEALTH, MARCH, 1880. [JULY, 1879,
 TO JANUARY, 1880.]

At the beginning of this period, there were in the leper settlement at Kalawao, on Molokai, 458 male, and 344 female lepers above the age of one year, a total of 802. During this period, there arrived at the settle-

ment, 35 male and 12 female patients of the above mentioned age, and there were entered by myself, two males as lepers, at the settlement, the additions from all other sources thus amounting to 49. During the same period there died, of male, 61, and of female lepers, 33, amounting to 94, thus leaving on the 1st January, 1880, a balance of 717 lepers above the age of one year in the settlement. On the 1st July, 1879, there were also in the settlement three infants below the age of one year, the offspring of leper parents; and of the infants there died two, leaving three leper infants living in the settlement on the 1st January, 1880.

* * * * *

I cannot refrain from remarking with great regret the comparatively small number of lepers that have been brought to this settlement from without during the past year, when one considers the great number still at large in the community. I gravely apprehend that this may prove a matter of serious regret to the Hawaiian nation in the future.

The ratio of mortality among the lepers during the past half year has been equal to 57 85-100 per thousand per year. * * * *

It is a matter for congratulation that the children born in this settlement have been so few in number. The philanthropist and the merciful man cannot look on with complacency and see offspring born to a race, or a class of people, who, he is convinced, are with certainty doomed to a miserable and loathsome existence and premature death.

During the period since my first arrival at this place the effort has constantly been made to improve the physical condition of the people under my charge: by seeing to it that the rations of food and other necessities were served out regularly and were sufficient in quantity and of good quality; by bettering their habitations; by inducing in them greater habits of cleanliness; by ministering so far as possible to their comfort; by applying the arts of medicine to the relief of their

various intercurrent maladies, and finally, by diligent study of the prime cause of their woes, to alleviate and, if possible, promote a radical cure of leprosy itself.

As to food, each leper in the settlement and all children above the age of one year, the offspring of lepers, receive seven pounds of fresh or salted beef per week. Fresh beef is killed twice a week. When, as formerly, Columbia River salmon was served out in lieu of beef, three pounds were deemed a ration. With this they also receive weekly twenty-one pounds of paiai, or, as its substitute, seven pounds of hard bread, or nine pounds of rice with one pound of sugar. At times it has been necessary, instead of the poi, which cannot always be obtained, or instead of the bread, rice, &c., to issue raw kalo, in which case thirty-one pounds is issued per head; and again in some circumstances to serve out sweet potatoes, the most abundant crop of this region, a food often preferred by many.

Any of the lepers at their option are, under ordinary circumstances, permitted to commute their paiai for fifty cents in money. Many of them are so industrious and thrifty as to plant patches of food which suffice to supply the wants of themselves and their families, and thus are enabled to draw a certain amount of ration money from time to time, which serves them in good stead in adding to their comforts. Besides the articles of food mentioned, each leper is allowed five pounds of salt and a half a bar of soap per month, and each house occupied by lepers is allowed at least one quart of coal oil per month. Other articles that may be required by the lepers can be bought at the Molokai store at very moderate prices.

Thus it is fair to say that the people at the leper settlement have a more regular, abundant and a better supply of food than would be theirs were they at their own homes from which they have been separated.

* * * * *

Besides the numerous ailments which lepers are heir to, in the month of July, measles found its way to the

settlement. It by no means spared those who were acutely affected with leprosy, but dealing impartially all round it passed slowly through the settlement, lingering until January, by which time the epidemic seemed to have spent itself for lack of fresh material. A few deaths only are traceable immediately to this cause.

With the coming of damp and chilly weather in November, and even earlier, there were, as usual, active symptoms of leprosy, chills, fever, malaise, and general pains, often with fresh leprosy eruptions—to coin a word, a *leprosy fever*. I remark it as it is the first opportunity I have had of observing it in full force. A novice on meeting this *leprosy fever* for the first time might suppose he had to deal with ague.

As to success in finding means for the relief of leprosy and promoting its cure, all can be said in a few words, and those not of entirely happy augury. Much, I find can be done to assuage the miseries and pains of leprosy and bring the patient out of the slough of despond into which he is often liable to sink; but as to cure, no therapeutic agents that I have yet been able to lay my hands upon seem to offer any rational ground of confidence that the means have been found capable of eradicating the disease from the system, or even of suppressing its outward manifestations for any long period.

Sometime in April, 1879, the Rev. Mr. Damien, Catholic priest, received from China, a large quantity of medicine, known as Hoang-nan,* (pills) which was heralded as possessing the specific virtue of curing leprosy.

Much hope was set upon its supposed efficacy and it was immediately brought largely into use. Trial of this drug has greatly modified the esteem in which it was at first held, and shown that, while it is of service

*This medicine takes its name from its chief ingredient, the bark of the Hoang-nan tree, with which are combined realgar and alum. The pills are very rudely put up, and vary in weight from 1 grain to 22 grains.

as a tonic in some cases, giving the patient for a time freedom from wonted pains, and grateful sense of renewed vigor, in another, which are the majority of cases, it quickly produces depressing or even tonic effects. This drug is still on trial in the settlement. Judging from my experience with it thus far, it yields perhaps less satisfactory results in the long run than other well known remedies that are generally used in the disease.

* * * * *

[In a medical tour of Molokai] I met with quite a number of people suffering with syphilis in an early stage. In one house the father, mother, and their young child were so affected, while a leper girl was holding and tending the child, a very dangerous proximity.

* * * *

My observation in traveling among the different islands of this group has more and more impressed me with the fact that leprosy is deeply rooted in a large fraction of this population, and that the lepers now outside of the leper settlement cannot number less than five or six hundred, and may even exceed that number. Omitting from the calculation, lepers isolated at the settlement, the number of those now at large in this Kingdom cannot be estimated at less than one per cent. of the entire population, which is probably a moderate estimate.

The more I study leprosy the more I am led to believe that it is a contagious disease, and that every leper is a possible source of infection to whomsoever comes in contact with him.

Making its appearance in these islands about 1856 or 1857, perhaps earlier, it has multiplied in geometrical progress, so that within thirty years, from being a strange and unrecognizable malady, it now reckons its victims by the thousand, and its features are become so well known, so stamped upon the public mind, that but few fail to recognize it at sight. Of all the causes, therefore, now operating to sap the vitality of the Hawaiian race, and to bring about its extermination, none

is so fraught with danger, and so calculated to alarm the mind of the well-wisher of this race as this disease of diseases. Science having as yet found no cure for it, philanthropy and patriotism unite in lifting up their voices to advocate the wisdom and necessity of the plan which has been adopted by the Board of Health, of separating the unclean from the clean, lest both perish together. I cannot, however, refrain from the remark that to be effectual, the method of isolation must be carried out vigorously: half way measures are of no use or of but little, and might always seem open to the charge of cruelty and injustice.

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HON. S. G. WILDER, PRESIDENT OF THE BOARD OF
HEALTH, 1880.

The position of a member of the Board of Health and especially the office of President is one of the most, if not the most, unpleasant that can be held in this Government. There is not a Hawaiian or foreigner in this country who has neither friends or relatives afflicted with leprosy, but will say, the law compelling the separation of lepers from society is a good and proper law, but so sure as it comes home to a household it is then considered unjust, the separating of families, the sending into exile any leper is no pleasant duty! * * * *

Hawaiians should not exhibit any unjust feeling against the officers who carry out the law. If all would conform and at one time give all that are lepers, the disease might be eradicated, but unfortunately Hawaiian will not shun the disease, will not cease to hold their relatives and friends until the poison has spread, until the afflicted becomes really offensive and a burden. However hard it bears, however much it costs there is no alternative but the strict carrying out of the law, separating the sick from the well.

HON. GODFREY RHODES, CHAIRMAN SANITARY COMMITTEE OF THE LEGISLATURE, 1880.

Up to the present day, science and benevolence, although indefatigable in search, have never succeeded in finding a remedy for the disease. The only preventive known by which escape can be made when the disease has once found footing in a community, is by segregating the stricken, separating the unclean from the clean; this has been practised in all ages and countries up to the present day. In some Christian lands so careful have been the authorities to prevent contamination that lepers have been confined and tended in a pest house, the sexes inexorably kept apart, so that there should be no propagation or transmission, until at last, in the course of nature, the country has been freed from the curse, and the dreadful habitations been tenantless.

In non-Christian countries the treatment experienced by lepers has been different. The unfortunates have been shunned, driven from house and home, and away from all communion with their kind, neglected, starved and even killed if they endeavored by stealth to find a home amongst their unstricken fellow men. How different has been the treatment experienced by Hawaiians, all who care may know. * * *

Your Committee cannot come to any other conclusion than that known from all historic time, viz: that to prevent general contamination, enforced isolation of those smitten with this dreadful disease from the healthy is imperative, and must be vigorously enforced. * * *

Your Committee would recommend that whenever the house of a confirmed leper is vacated by his removal to Kalawao, it and its contents, whenever practicable, should be burned, regardless of the apparent loss that may ensue, for it has been proved by our own experience, as well as by the accounts we find in Holy Writ above referred to, that contagion is spread by inanimate objects that have been used by the stricken. It

was reported to the last Legislature that three persons in succession infected from the disease were removed from one house, although they had not any communication with each other, but each of the last two occupants had removed to and taken possession of the dwelling on its vacation by his predecessor. This evidence your Committee regard as conclusive, and they consider the destruction of the tenement or house should be considered a beneficial measure, inasmuch as the future spread of the disease through that means would be rendered impossible, the suffering owner being supported at the expense of the State. * * * * * Your Committee believe that they are only doing their duty in not attempting to buoy up minds with rose-colored but visionary hopes, and in expressing their firm conviction that this pestilence, like any other calamity, must be unflinchingly encountered with promptness, energy, determination, and the most efficient means of repression we have at command. Should we indulge in the fond dream that the great trouble which overshadows the land can be dispelled by any but the most drastic and thorough treatment our awakening would be sad. We should gradually sink into loathsome decay and death, and our bright and beautiful islands would be shunned by the rest of the world as a living charnel house, instead of being sought as a place of refreshment and refuge; while if we manfully act our own parts, and resolutely help ourselves, we shall meet with sympathy on all sides, and be ready to adopt on the shortest notice whatever remedy for our evils science may discover or benevolence bestow.

REPORT OF DR. CHAS. NEILSON, KALAWAO, MOLOKAI, SEPT. 21, 1880.

To His Excellency Jno. E. Bush, President of the Board of Health, &c., &c.:

SIR:—I have the honor to transmit the following report of my medical inspection made at the leper settlement, Kalawao. * * *

The building consist of the "Hospital Dispensary," for hospital barracks, seven other small houses, and one small cook house. The dimensions of the above are, viz: Dispensary, 30x20 feet; barracks, each, 30x18 feet; the smaller houses, 10x12 feet. These excepting the dispensary and cook house include the entire hospital accommodations. These buildings are partially enclosed by a picket fence; the area of the enclosure embraces about three-fourths of an acre. The fence and buildings were well whitewashed, the latter inside and outside; they were cleansed bi-weekly by washing and scrubbing the floors.

The design of the buildings for hospital use was unsuitable, the ventilation imperfect. The patients in the hospital received their rations of food daily; those outside weekly.

The following patients and kokuas found the working detail for duty:

Ahia, leper, (native) acting hospital steward.	\$ 7.00
Nakina, " " clerk of store and hospital.....	10.00
Kokuas* " sheriff.....	10.00
" leper, 1; policeman, 3 (each).....	2.00
" harbor master, 1.....	4.00
" butchers, 4.....	5.00
" leper, 1; cartmen, 1.....	4.00
Policeman, 1; for hospital grounds, grave diggers, 1; dressers 1, in charge of native named Kalama, aggregate wages	17.00

The acting superintendent, Mr. Clayton Strawn.

* Kokuas.—Helpers, nurses.

having charge of the employees mentioned; his salary is \$25.00 per month.

The wages placed opposite the names written, represents their monthly pay. When help is needed to drive stock over the pali a detail is made from among the kokuas, who receive \$1.50 per capita for each animal's safe delivery at Kalawao. There was in the hospital forty-seven patients, male and female, in separate wards. I hereby annex the summary taken from the report specially made from date,

Males in Hospital	40
Females "	7
Males outside hospital	341
Females " "	235
Grand total	623
Males admitted since July 20th	2
Females " " "	1
Whole number to date	626
Deaths since July 20th, males, 10; females, 11.....	21
Remaining	605
Birth since July 20th, two male children.	

I visited Kalaupapa on the afternoon of the 18th. This portion of the settlement is distant about one mile from the hospital towards the sea. I found many of the patients grouped together, they had been attending church and were returning to their places of abode. It was here I specially noticed the varied phases of leprous cachexia, chiefly of the tubercular type. I returned by the way of the sea shore visiting a hut here and there with a view to acquaint myself with their habits of life. I found many of them preferring to live near the sea in their grass huts; their diversion being that of bathing and fishing. I was informed by the apt superintendent, Mr. Clayton Strawn (himself a leper), who accompanied me upon my inspection, that they drank the brackish water found in the depressions made

in the rocks by washing of the sea, the rainfall and atmospheric action.

The water supply at Kalaupapa is derived from a spring at Waihanau, and in dry seasons the lepers are compelled to visit Kalawao to procure water, which they transport by means of coal oil tins and paint buckets. I returned to the quarters of the superintendent, from thence I revisited the hospital to examine into the clothing supply. I found (30) blankets which had been in former use by leprous patients non-diseased, also collections of their clothing. They had been washed and dried in the sun and were placed away for safe keeping. When the occasion demanded an extra supply of clothing it was furnished them upon application to the steward.

This constituted the entire stock of clothing on hand,—the patients lying upon their own mats. I found the hospital accommodations insufficient for the reception of the more aggravated cases. As they are naturally inclined to help each other, those who are scarcely able to help themselves should receive assistance in hospital and not be allowed to increase the general debility of others.

Their Hygienic Condition.—The hygienic condition of patients would be much improved if additional hospital accommodations could be procured. I would suggest that an additional hospital be constructed for the accommodation of at least one hundred patients, that it be constructed in a proper manner to insure more perfect ventilation; greater cleanliness, and add to the general comforts of the inmates; that its location is made upon the plateau of land facing the sea opposite the Wai-manu gulch; that suitable bath rooms be provided to secure a more thorough system of medication in connection with special treatment (namely, that by medicated inunction and bathing from time to time) which contributes so much towards their relief.

Their Dietary.—The paiai I found to be of good quality; beef cattle fair; the hard bread, much of it dam-

aged by weavils; the rice and sugar, good; the salmon, ordinary, and I wish to mention *pari passu* that this article should never be issued to leprous patients on physiological grounds.

The Water Supply.—The water supply comes from the Waimanu gulch, distant about one mile from the hospital, conveyed by iron piping of an inch in diameter, beginning at the reservoir in the gulch, and ending at Kawaluna, which is nearly half way between the termini; from thence it is conveyed as far as the superintendent's quarters by means of an iron pipe three-fourths of an inch in diameter.

There are nine faucets between the reservoir and the superintendent's quarters to assist in supplying the patients, the horses and cattle in that portion of the settlement known as Kalawao. I found the water refreshing and pure. I suggest that another site should be selected at a point above the present location of the reservoir as there is a better spring at a greater elevation in the gulch, and a very short distance from the present supply. The reservoir should be constructed of stone and cement and enclosed at the top by a movable cover to assist in cleansing it when required, and that iron piping be laid along the entire distance having a diameter of not less than two inches, as the present supply is oftentimes interrupted owing to the smallness of the pipe at its terminus.

In relation to the usages which have thus far prevailed against sound medical reasoning I wish to invite your attention. I refer to the kokuas or helpers, male or female, as the case may be. They come and go at will, always, however, with a permit. His or her mission is apparently to aid the afflicted by ministrations to his family, relations, or friends. The husband domiciling with his leprous wife, or vice versa, awakens some apprehension in the mind of the medical officer who has the charge of their well being. To deprive him or her of their affectionate embrace at meeting or parting would be regarded as cruel and inhuman by some, yet

the medical man is asked to aid in arresting the progress of this terrible malady, and his counsel is supposed to have influence with the executive.

Without hesitation I am prompted to say that some action must be taken to prevent the healthy from comingling, feasting or dwelling together in the same apartments or else little can be expected since it is known that leprosy is a contagious disease; that medical scientists throughout the world accept without dissent this doctrine as conclusive, and many others are of the opinion concerning its infection. Without engaging in a discussion relative to this point, I am convinced in opinion from observations I have made personally in Brazil that under certain conditions I regard it as an infectious disease.

What can be done to check its progress? Establish a quarantine and seek to carry out good and effective sanitary laws. Upon arrival at the settlement of relations or friends of diseased persons the following obligations should be exacted from those who desire to see the sick.

1st. Ascertain if the proper permit has been regularly made out and bears an official signature.

2nd. The time granted (to him or her) to remain.

3rd. That the visitors be provided with apartments during their sojourn obviating their *constant* intercourse with patients.

4th. That their visits be confined to the day time; that their conduct be under the espionage of the policeman who is specially detailed to see that the regulations are enforced; that a daily report be required of him who is entrusted to perform this duty. Under no circumstances be they allowed to eat and dwell (during their visit) under the same roof. I know it will be difficult to secure a strict adherence to these regulations in the beginning, though it is necessary; a trial should be made to avert the present baneful system still operating.

If these regulations or others having in view the same objective cannot be enforced, in time the future of this

country will unfold a history ill-foreboding to the Hawaiian people, and that inestimable and priceless heritage, good health, will no longer be found among them. Thorough isolation is the initial point to be taken into consideration when dealing with this disease. It is the only means afforded to check its progress, the most powerful auxiliary to destroy it. In fact if proper hygienic laws cannot be made effective it will remain triumphant, germinating and spreading destruction through every conceivable channel of intercourse.

Articles of Export.—I will briefly remark that the hides, tallow and such other articles intended for export should undergo thorough disinfection before shipment. The produce raised by them should not be permitted in exchange or barter outside of the settlement; that the store be also disinfected, and that no leprous person should be allowed to handle the same from first hands. The free trade now existing between dealers in produce and supplies of various kinds should be interdicted and a rigid quarantine be established; that no interchange of commodities be sanctioned save through the Government agent who has charge of the purveying depot. They should be required to dispose of the number of horses in excess of the Government allowance as the herbage has grown so scanty that the milch cattle are suffering from a deficient supply of food. Of the various theories advanced by medical writers, that especially noticeable is the one of malarial origin; it has many supporters; that it occurs in both tropical and frigid countries is equally true; that *per se* it may be of idiopathic birth due to perverted nutrition which may be partially causative. The literature of medicine has contributed but little knowledge towards this subject matter, and less concerning its therapy. We are forced to speak of it as we do of other diseases that it may be acquired by contact, namely: intermarriage, cohabitation, inoculation, vaccination, and by hereditary transmission. The latter is proven beyond dispute. One of the most potent and constant causes

operating among these people is that one of promiscuous cohabitation. I believe it safe to say that the syphilitic virus operative in a leprous patient is the medium through which the constitutional infection of both diseases is conveyed, that once implanted upon sound tissue an ulceration ensues which evidences, sooner or later, a progressive enthetic poisoning revealed by the integumentary system when both pigmentary and glandular phenomena are apparent, peculiar to each disease.

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I wish to remark here that there were no disinfectants remaining on hand among the medical supplies and that the hospital nor buildings pertaining thereto, nor the houses on any portion of the settlement have been disinfected for the past two years.

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I will add that the medical supplies now on hand are insufficient to meet the present demand; they are in need of many articles (pharmaceutical) that have been expended, and many remedies are wanting that they constantly require. A requisition should be made out immediately for their benefit in order that they be not deprived of regular and continuous treatment.

The absence of a medical officer for so long a time has caused to many of them great dissatisfaction and distrust.

CHAS. NEILSON, M. D.,

Medical Officer in charge and General Superintendent at Kalawao, Molokai.

REPORT OF CHAS. NEILSON, M. D., RESIDENT PHYSICIAN,
LEPER HOSPITAL, MOLOKAI, JULY, 1881,
H. A. P. CARTER, PRESIDENT.

* * * In reviewing my work at this settlement during the semi-annual period ending July 1st, 1881, I am pleased to notice one improvement in a hygienic sense, namely, that the houses have been whitewashed, which is in striking contrast to the dirty, miserable looking tenements that greeted my eye upon my first coming. * * * An improved hygiene is what is first and most needed to successfully combat all diseases.

1st. A removal of all appreciable sources which are known to be productive of disease germs.

2nd. To construct houses for hospital and other uses which will ensure the most perfect ventilation without undue exposure to the inmates, and to insist upon them being kept clean.

3rd. A plentiful supply of pure water, and lastly to issue a generous dietary of fresh meats and vegetables; together with suitable articles of clothing adapted to the climatic changes incident to the locality. I will now ask have these conditions been fulfilled? I will reply in the negative to some of them. In answer to the first of the necessary conditions, I will add that I have failed to interdict the use of salt food, (I refer to their eating meat which they salt for their use) as well as that of fresh pork.* * * * The traditional luau of the natives with fresh pork as chief staple article of diet prevails despite my admonitions to the contrary; all entreaties of mine to abstain from eating these diseased animals have failed.

Unless this pabulum for the disease be removed all efforts to secure a more perfect system of hygiene for

* Dr. Neilson maintained that the hogs, dogs and chickens at the settlement were diseased with leprosy, and demanded their destruction by the Board of Health.

these people will fail, and the therapy of medicine be futile to record satisfactory results. Concerning the hospital buildings, I will refer to my quarterly report wherein I said they were all well adapted for the purposes required of them. The houses occupied by the lepers will answer very well, provided they can be kept clean. In many instances the occupants are too debilitated by the disease to do more than provide themselves with food, and seek their mats for relief, whilst hospital accommodations are insufficient to give shelter to many who are in need of greater assistance. The water supply is abundant during the winter season for all uses, in summer it is limited, and great inconvenience is experienced by those in constant need of bathing. The supplies of beef, mutton and paiai are regularly issued, together with other rations of food; they are of excellent quality, the same being true in reference to the clothing supplies. As leprosy in these islands is a disease of propagation and not one of production, I am prompted to refer again to my last quarterly report wherein my views relating to the establishment of a rigid quarantine for these people have been expressed. It being a contagious disease, may I ask why are people allowed permits to visit this settlement, to eat, and dwell among the lepers during their sojourn, returning to their respective homes to mingle among the healthy. I will say I am powerless to prevent it.

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In proof of the activity of the contagion of leprosy witness the rapid propagation of this disease since 1851, the rapid decrease of population irrespective of its existence, and note the great number of lepers still at large. Have they decreased in number? No. Has the partial isolation adopted by the Government been successful in retarding the progress of this malady? I say not. Whilst still the baneful causes of contagion are still operative there can be no remedial measures instituted that will achieve even a temporary victory over the steady leprous march to the grave.

The law of hygiene must be respected in dealing with this dreadful malady if this Government has in view the perpetuity of the Hawaiian race. The pernicious practice of permits being granted to a people entirely ignorant of the dangers attendant upon visiting this settlement is known to every medical mind in this Kingdom. The reply of Mr. Clayton Strawn (himself a leper), is that the Board of Health has not provided a house for the reception of visitors, and he cannot prevent the relatives of the patients upon arrival from kissing, eating, smoking, hand shaking, and dwelling together during their stay.

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There is no better field in which to study the pathology of leprosy than in these islands. Let us first, however, improve the hygiene of these people before we attempt medication, or otherwise we will fail of success. The defective hygienic conditions now present will ever defeat the aim of the practical clinician as well as the scientist who seeks knowledge of this disease in this country. Let a dead house be secured, say at the small pox barracks, (as your Excellency suggested to me) as a suitable location, for the purpose of investigating the pathology of leprosy diseases. Let there be appropriate apparatus provided to aid in obtaining knowledge of this disease together with a few metallic boxes in which to convey the cadavers from the settlement. Then those having charge of this investigation will have an opportunity of verifying at least in these islands the peripheral or centric origin of the disease. Let the Government make a liberal appropriation for this purpose and appoint those to perform this work who are devoted to the interests of medical science and whose object is not entirely mercenary.

The fact that leprosy attacks more readily those whose vitality has been impaired through chronic malarial diseases (in the East Indies for instance), where the malady is endemic, is of no scientific value in a medical sense, diseased action is invited whenever the

vital powers of the system are reduced below the healthy standard of the individual whether he lives in India or elsewhere; equally absurd is it to ascribe the *de novo* cause of leprosy to the climatology of the country or to the peculiar dietary of the people since it is known to occur both in the North Temperate Zone and the tropics; still happening among a people whose mode of living is dissimilar in every respect excepting their bad hygienic condition.

I regard leprosy as essentially a neurosis; the principal factors productive of the disease are poverty, ignorance, scanty and unwholesome diet, continuous living in a vitiated damp atmosphere, with insufficient raiment and impure water. These conditions invite the peculiar bacteria which are unquestionably in the blood of the leper wholly unlike those found in healthy blood. Whenever the disease exists among a people with these conditions present it is certain to fructify and destroy life. Elephantiasis, a disease, simulating leprosy, does not make any progress in the United States of America because the conditions of the people are different from those of the lower order of natives in the Argentine Republic, Brazil and other South American republics. It is purely a tropical disease.

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Leprosy is a disease which will make no progress in the United States of America, unless through hereditary transmission and propagation; its life would terminate with the individual who was the unfortunate possessor, owing to the existence of stringent sanitary laws. In no country has it been found to germinate with greater rapidity since its advent than here, owing to an excess of those fertilizing materials ever constant among these people, consequent upon their superstitious adherence to their primitive customs, until it no longer can be said that this malady is not endemic to the Hawaiian Islands.

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It may be asked do persons afflicted with leprosy ever recover? Yes,

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Notwithstanding the climatology and dietary of the people an improved hygiene coupled with an appropriate medication has proved successful in some cases. From the Norwegian hospital at Norgegaard we have like testimony emanating from Dr. Danielsen, a gentleman whose scholarly and medical attainments are known to science. He mentions recoveries constantly occurring under the prolonged use of salicilate of soda in gramme doses with sufficient alcohol as the solvent, given three times daily.

There is no specific remedy for leprosy, nor is there for any other disease to my knowledge. Do not think that the recoveries from this terrible disease is due wholly to medication; it is not. Establish the most perfect hygiene possible, then direct the medical treatment when the disease is the result of propagation, and not of hereditary origin; in its early stages it is amenable to treatment. It is in these cases where we note the recoveries.

Retrenchment in expenditures is a fatal policy when dealing with a national scourge like leprosy. I will now invite your Excellency's attention briefly to the treatment pursued at this settlement. In December last, I received, at my request, a quantity of gargon oil from the customs of the Government, which had been sent for use at this settlement, after having read carefully the reports concerning its great value in the treatment of this disease. I began to use the oil at the settlement the latter of December; after using it for a couple of months, I was satisfied it possessed curative virtues. I wrote favorably of it then, having had no occasion to change my opinion since. I recommend that the Government be asked to provide more for use at this hospital.

Of the twenty-five cases in hospital who began the use of this oil as divided by myself, many of whom were in an advanced stage of the disease, three only have died; the remainder still continue its use express-

ing themselves as feeling well when asked the state of their health. During the winter months the patients were compelled to suspend the treatment by inunction, owing to the absence of bath rooms wherein they could bathe and be protected from the chilly winds prevailing at that season. I will here remark that bath rooms in proximity to the hospital buildings are sadly needed to aid in promoting cleanliness of person among the patients. I am now unable to induce the natives to continue the use of the oil by inunction owing to the absence of bathing facilities.

I found that as long as the oil was used as first directed, an amelioration of all the symptoms followed; with decided changes in the skin eruptions. The average length of time required to remove the psoriasis of the skin (a most distressing skin eruption accompanying this disease), was (13) thirteen days. In adding my testimony to its value as an adjunct to the treatment of this disease, I will say that in every instance both in hospital and outside (where it has been used extensively), I know of no case in which it has failed to improve the general health of the patient. The patients who had been taking the Hoang-nan pills, the Japanese medicines of Dr. Goto, relinquished their use for the gargon oil treatment with which they are better satisfied. I have alternated this treatment with that of quinine in large doses. Better results have been obtained from the use of the hydro-bromate than the sulphate which I employed. My plan was to give sedative doses at bedtime to the extent of twenty grains, guarding against cerebral disturbance in the extreme, and iron through the day. I am perfectly satisfied to know that quinia in large doses arrests the deposition of granulation tissue formation. Of the many topical agents whose virtues have been praised for their discutient effect they exercised over the tubercular deposit, none have produced such marked success as arsenious acid in the form of an ointment applied until pustulation results, then dressed with chlorinated soda lotions. In the

ulcerative stages when the destruction of tissue has been extensive bromide has proved of great service.

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REPORT OF THE PRESIDENT OF THE BOARD OF
HEALTH TO THE LEGISLATIVE ASSEMBLY, 1882,
W. N. ARMSTRONG, PRESIDENT.

In October last, my predecessor, Mr. Carter, succeeded with the kind co-operation of Her Royal Highness Liliuokalani, in procuring a lease of the premises at Kakaako, near Honolulu, upon which he caused to be erected buildings which should serve as branch hospitals. It was intended that those who were said to be lepers, should be placed in this building until it was clearly decided whether they were or were not lepers, and if it was finally decided that they were, that they should then be removed to Kalawao, in accordance with the well established rules. There had been complaint about rough treatment of lepers, and that persons suspected to have the disease had been cruelly seized and removed to Kalawao. By using this branch hospital it was hoped that such complaint would be avoided.

Dr. G. L. Fitch took charge of this branch hospital. On account of his success at the dispensary, large numbers of lepers at once came to the hospital. It contains at present 92 patients. Not only the lepers of Honolulu, but those of other islands applied for admission. The buildings were increased as fast as possible. When the lepers found that they were not to be hurried away to Kalawao, and also believed that they would be cured by Dr. Fitch, they did not hesitate to come forward. The result is that the lepers are coming forward freely. A controversy has arisen between Dr. Fitch and other physicians of the Kingdom as to the nature

of leprosy. Dr. Fitch insists that leprosy is merely syphilis in its "fourth" stage; that by the constant use of medicine it may be considerably, but not permanently relieved; and that it is not quickly contagious, especially among the Hawaiians, whom Dr. Fitch claims are "saturated" with syphilis. Other physicians admit that the disease may be relieved for a short time; that the disease is not very contagious, but they deny that it is syphilitic in any form. The medicines used by Dr. Fitch have been known and used here for some years. These are iodide of potassium and salicylate of soda.

Owing to the want of systematic investigation in the past and the failure to keep complete records of the disease, very little is known about it. The well-known opposition of the natives to post-mortem examinations prevent valuable researches. On the point of contagiousness of the disease there is much to be learned. The practical subject for the authorities is how far isolation must be insisted on. The physicians of other nations insist on isolating lepers. So do the physicians here. Dr. Fitch claims that when the leper is relieved by proper medicine, he cannot communicate the disease, and it is safe for him to be at large. He admits that the disease will increase again. The question then arises, is it safe to allow one to go at large who has leprosy, even though it be only a slight taint? He may be able to communicate the disease. If he is, it may be fatal to the Hawaiian race for him to be at large. This is no time to try experiments with the life of the natives. Perhaps Dr. Fitch is right. He has been in the country less than two years and has had experience with leprosy during that time. Drs. Hoffman, Trousdale, and many other able physicians, who have served the people well do not agree with him. There are probably 2,000 lepers in the Kingdom, or five per cent. of the whole native race. It is probable that as many more have seeds of the disease. So many afflicted with the disease is very extraordinary. It may be safe to

permit the lepers to go at large after they have been treated, but if a mistake is made fatal results may follow.

The proper course to take in this matter is not clear. Instead of using the branch hospital as originally intended it is now being made a permanent leper settlement. Those who are incurable are retained there. None are sent to Kalawao, except for disobedience of orders. This course is permitted rather as an experiment by Dr. Fitch. It will result in this however, if it is further pursued, that a great leper settlement will be built up near Honolulu. In the hospital and in the city there are now about 400 lepers, and the number is increasing constantly.

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The Leper Settlement.—The accounts of the settlement show an expenditure of \$85,255.89 out of an appropriation of \$85,000. The people are well supplied with food. No complaint of any kind has been received by the Board of Health from the lepers for a number of months although there is no physician there. While physicians resided at Kalawao, complaints regarding them were frequent. Mr. Meyer, the superintendent informs me, that the people prefer to be without a regular physician. It is difficult to secure the services of a good one who will reside at the settlement. Many of the lepers prefer treatment by kahunas, and do not wish to be put under rule by any foreign doctor. If any are made, it is the experience of the Board that complaints are at once made, if the lepers are restrained. Still, if they cannot be benefitted by doctors or rules, what should be done. If they cannot be benefitted, it would be unwise to put them under any restraint. Their condition is unfortunate, and it should not be made worse by depriving them of their liberty by keeping them in hospitals, or regulating their diet. There is some hospital accommodation, but the people do not use it. Nurses are needed, for there are many who cannot help themselves. Such nurses should be se-

lected from among the lepers who are able to work, and they should be trained to take care of the sick, and especially those who are old and feeble. It is hardly right to take the lepers away from the care of their friends and leave them alone to care for themselves. This subject will receive more attention in the future.

* * * * *

There should be accommodations for those who have good reason to visit their friends at the settlement. Even if isolation is necessary there is no reason why, under certain restrictions, the people should not see their friends, as they now do at the branch hospital in Honolulu. When a leper is seized and taken to Molo-kai, it is a sentence of death. He has committed no crime. He has met with a great misfortune. He is driven out of society, that others may live. Without intending to act harshly, the Government has not been careful enough of his feelings. For this reason he has often refused to give himself up, and the disease has spread. Kalawao is a pleasant place. After the leper has lived there a few months, he is contented to a certain extent. The policy of the government should be to treat him so that he may enjoy life while he has it. By erecting a building near the landing and surrounding it with a picket fence, visitors could be permitted to see their relatives without touching them. In certain cases, they might in company with the police, visit the homes of their friends, if they cannot move. Instructions have been given to the superintendent to erect such a building.

The purpose of the law in isolating them is greatly obstructed by the existence of *kuleanas* in Kalawao. These belong to private persons, and the Government has no right over them. The consequence is that the friends of the lepers gather in these places, and the lepers go there at night. It is impossible to stop this, unless the Government purchase the *kuleanas*. There are probably 100 acres of these lands.

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REPORT OF DR. G. L. FITCH, MEDICAL SUPERINTENDENT OF THE BRANCH HOSPITAL AT KAKAAKO, AND RESIDENT PHYSICIAN OF HONOLULU, MARCH, 1882.

* * * From such inquiries as I have made among lepers and intelligent natives from different parts of the group, I believe the 508 cases who have applied for treatment during this quarter, and those of last quarter, comprise a majority of those at large now in the Kingdom. Including the number at Kalawao (about 700), and the 92 now in the leper hospital here, I think I am safe in putting the entire number at, not to exceed, 1600 cases in the Kingdom. Many of these are extremely light, a sort of anæsthesia, or a few tubercles, the general health in no way being greatly disturbed.

The disease, however, is everywhere among us, members of the police force, the soldiers, the band boys, pastors of churches, teachers, students, are all among the sufferers. (Of course it will be understood I refer only to natives).

That 508 cases should apply for treatment in a single quarter shows that the endeavor to enforce the law of segregation as it has been carried on here for years, has been a most complete failure, and considering the kindly, loving nature of the native race, and the heartless manner in which sufferers have been treated, the only wonder is that as many cases have been sent to Kalawao as are there now.

As my opinions in regard to leprosy have been made a matter of public comment, I desire here to make known my views as far as they may concern the public at large. Leprosy is the fourth stage of syphilis, a stage that white men are exempt from in a vast majority of cases.

First.—By reason of hereditary immunity.

Second.—By reason that medical science has advanced to such a stage that while we cannot kill the disease syphilis, we can most heartily scotch it.

Now let us look at some of the facts as they are presented to us in these islands :

First.—During the forty years or thereabouts, that leprosy has existed here, less than twenty cases all told have ever appeared among the whites. Two or three children, one young woman, a dozen or fifteen men; and yet how much doubt is there that a large number of white men have contracted syphilis from these native women. These cases of syphilis have not run into the fourth stage, or leprosy, simply by reason of hereditary immunity and the services of physicians, most strongly the first reason. The children who have had it are commonly believed to have contracted it along with vaccine virus used in vaccinating. Men who have had it have contracted it the natural way and have simply received a just recompense and reward for their licentiousness. In these few cases, those unprotected by hereditary immunity, the disease has run on into the stage known as leprosy.

* * * * *

Now if upon the disease as existing in the tertiary stage we find so clear opinions that a radical cure is impossible, what can we expect in the fourth stage or leprosy?

And yet while authorities all agree that the disease is incurable, all equally agree that its horrors may be greatly mitigated in a large proportion of cases.

* * * * *

But let us turn from disputed points to one where I think I am justified in saying medical men here all agree, namely: A person with syphilis presents a more favorable field for leprosy to work upon.

Now if this be true and the statement made at a recent meeting of physicians by one of the oldest and most favorably known of the medical fraternity of Honolulu also be true, namely, that four-fifths of the native population of these islands are infected with syphilis.—I believe this statement too mild.—What is the duty of the Government in the premises? Let us couple the

two facts. For all practical purposes, every native in the group has syphilis and all are ignorant of the laws of health and hygiene and ignorant of the value of medicine to effect relief.

* * * * *

Now let us consider the possibilities with regard to cure in leprosy.

First.—Let us define what is meant by cure. If cure means that tubercles can be dispersed and anæsthesia disappear leaving no trace of either; that crooked and distorted fingers can be made straight, that racking pain leaves the body and the patients are made to look the picture of vigorous health, no vestige of the disease remaining, or at least so little that no physician examining would for a moment think of pronouncing the person a leper, then I am ready to declare that leprosy can be cured and to declare further that I have cured a considerable number of cases. Time and time again, I have seen fingers which were contracted firmly into the palm of the hand, straighten out, anæsthetic and discolored patches of large extent disappear, and tubercles also, leaving the skin soft and supple and of natural sensibility. But I do not understand the word cure. If after the lapse of years these cases so *improved*, continue in health and strength with no signs of returning disease and finally die of old age without manifesting any signs of the disease; then and not until then shall I believe this thing can be cured.

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Danielsen, in a communication to this Government some months ago, avers that he cured one-third of the cases coming to him in the earlier stages of the disease.

I am using the means he recommends and the results are wonderful.

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It follows as a necessary sequel, if my views in regard to leprosy are correct, that leprosy is not infectious or contagious, as it is a well-known fact syphilis is not in any manner communicable *as syphilis*, after the

secondary period. This matter should be fully investigated. Condemned criminals should be given the choice of inoculation with the blood and matter from leprous patients or execution as preferred by them. That such a chance as has been presented for many years for scientific investigation in regard to this matter has been entirely unimproved by medical men who have had charge and direction of the medical affairs in this community; that science has been made no whit the richer as a result of their labors; is one of those things that may be explained in eternity, but cannot be in time, unless it be that their minds were too dull to grasp the wonders going on around them. That this race is now going through a change, such as Europe went through some centuries ago, by which that part of the world is now protected by hereditary immunity from the worst results of syphilis, I have no doubt. That they can be so generally sufferers from this disorder and still retain superb physiques which so large a proportion of them still have, proves conclusively that there still remains an immense amount of latent vigor in the race. This brings us to the consideration of the reason why this disorder has been allowed to run on unchecked and uncontrolled.

Reason number one is undoubtedly their uncontrolled licentiousness. They have to learn the lesson that this thing is *certain, sure and inevitable death* to themselves and offspring and race, and the sooner they right-about-face the better their chance.

Reason number two, and a strong reason, is the dislike of the native to apply to Government physicians for advice and treatment. His great fear that he would be pronounced a leper and hurried off to Kalawao has been partly the cause, and unfortunately in many instances the physicians employed by the Board have been gentlemen too much engrossed in raising sugar or gentlemen of elegant leisure to such an extent that if a native applied for treatment without a liberal fee in his hand, his wants were very poorly attended to. Now to

a people just emerging from barbarism hardly conscious of their own necessities, with faint ideas of the value of medical treatment, such work as this is simply nothing but a ghastly mockery. Your Honorable Board should in my opinion forbid a Government doctor to charge a native for medical service, and every doctor should be required to visit all portions of his district every week and attend faithfully to every case presenting itself for treatment. To simply put a doctor in a field and pay him a salary and receive nothing in return, may suit a man who wants his time to himself and a salary thrown in, but it is extremely unjust to both people and Government.

By no people in the world is a kindly care for their welfare and courteous treatment more appreciated than these, and they will not go to a physician whom they don't like and respect, any more than a white man will. To act when a native goes for treatment as if the matter were hardly worthy of serious consideration, or to roughly inform him that there is nothing the matter with him while the poor wretch is suffering with syphilitic rheumatism, then give him a dose of salts or castor oil and send him away is not calculated to increase his respect for medical science or his love for the doctor. On the contrary I know from personal experience that a careful attention to their pressing wants and necessities—no people ever needed care and attention more than these—will insure prompt and careful obedience to the instruction of their medical adviser and a firm and abiding faith and earnest desire to show their regard and gratitude to the physician who faithfully does his duty by them. But licentiousness alone is not to blame for the spread of this disorder. Passing the tobacco pipe from mouth to mouth is not an uncommon cause, and I fully believe the custom of numbers eating poi out of the same dish, with their fingers, also comes in under the same head.

Europe once saturated with this disorder has emerged to a great extent, and I believe these people are begin-

ning to awaken from their long lethargy and now with a strong helping hand they may hope to escape and once more become what the race was in the past, a strong, hearty, vigorous people.

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REPORT OF DR. N. B. EMERSON ON A VISIT MADE TO THE LEPER SETTLEMENT, MARCH, 1882.

* * * The condition of the dwelling houses has been greatly improved during the last two years, and it is safe to say that nowhere, outside of the settlement, is there an equal population of Hawaiians so well housed and sheltered. The condition of the house in the hospital grounds is also most excellent.

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The *kokuas* are an indispensable arm of service at the settlement. Without them it would be a very difficult task to carry on the establishment. They climb the pali and drive down the cattle, they fetch the wood from the mountains and carry water from the valleys, they go into the water and cultivate and pull the *kalo*, they handle the freight landed at Kalaupapa, all of which are services the lepers cannot perform for themselves. They do the work which only sound hands and fingers can do. In fact this important and necessary class of people supply hands and feet for the leper when his own give out. Yet a danger arises from a possibility of these men carrying away with them the germs of leprosy and distributing them when they leave on their occasional visits to their houses on the other islands. When it is borne in mind that these people have leprous relations, wives, husbands, children, brothers or sisters with whom they live, while in the settlement, on terms of unrestricted and fearless intimacy, this fear will not be thought groundless.

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I could not but be painfully impressed with the ravages made by the disease among the people of the district since my departure from the settlement in 1880. This was evidenced by the number of deaths that had occurred, by the changed aspect of the great number who showed increased evidence of the hold the malady had upon them. Features had become more bronzed, thickened, distorted and unrecognizable, extremities had become mutilated or lost, eyesight in some was extinguished, and those who then possessed considerable vigor were now unequal to their former activity. To come now to the great and important question of the sanitary and medical wants of the lepers at Kalawao; these may be summed up in one sentence, the need of a physician to reside among them, and I should also add a certain number of nurses. On asking them what were their troubles, their *pilikias*, they almost with one voice said that their one *pilikia* was the disease they bore in their bodies and their one need was that of a physician.

Said one of the most intelligent and thoughtful among them, himself a great sufferer, "It is not that we have any hope or expectation that any physician can cure us of leprosy, but that we need and wish some doctor to abide with us and care for us, to treat our sores and ulcers, to minister to us in the numerous other maladies which constantly prey upon us." Similar expressions were made by so many, and repeated in such a variety of forms, that I could not but be convinced this was their sincere wish and represented the sentiment of the majority. * * * Before leaving this point, let me say the Government has done much for them in giving them this spacious and fertile land for their home, and in satisfying so many of their wants, but its whole duty to this unfortunate class will not have been done until it shall have provided for this great want of the leper settlement at Kalawao. Leprosy is the chief, but not the only disease from which they suffer. They are specially subject to affections of the

bowels and lungs, to fevers, dropsies and numerous other intercurrent maladies; their skin is liable to various painful and annoying eruptions, and their whole body to ulcers and putrefying sores. All these require the constant attention of a physician.

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I cannot but regard this as a fitting time to consider briefly some theories and views that have been publicly expressed in regard to the nature and sanitary management of leprosy. The importance of these views lies solely in the influence they may have in leading to a sanitary policy that is full of peril, and likely to prove destructive to the Hawaiian people.

The assertion has been made that leprosy is but the fourth stage of syphilis. This cannot be substantiated by any medical authority whatever.

Historical leprosy antedates syphilis by many hundred years, and its worst ravages in Europe were committed while syphilis was yet unknown. How can leprosy be derived from syphilis, be its "fourth stage?" If the "fourth stage" theory be true, why do not numerous cases of leprosy appear simultaneously wherever syphilis has prevailed? Neglected syphilis, syphilis not thoroughly treated, or not treated at all, is common enough the world over; but we do not find such cases running on into leprosy. The Kamschatkans are very abundantly diseased with syphilis and have been for a long time, but leprosy does not prevail among them. As a fact, we find syphilis producing only its like, syphilis, and leprosy only its like, leprosy. Inoculate syphilis in any inoculable stage, and we get but the one and the same disease syphilis, which to scientific men the world over has thus far presented but three not four stages.

Again leprosy appears in groups, affecting families and people living together; it does not spring up sporadically here and there. If any one has leprosy it will be found he has been exposed to the contagion of leprosy in one way or in another. I have carefully ex-

amined hundreds of cases of leprosy, talked with them in their own language and learned their histories, and have, with only a few exceptions, traced the origin of their disease to previous leprous intimacies or relations.

It is true the Hawaiians were extensively diseased with syphilis before the appearance of leprosy among them, but they *were not all diseased, and are not to-day*; there is a very considerable majority who are exempt. I look upon it as an unjust aspersion of this race to make such a sweeping assertion regarding them as has been made on this point.

In order to satisfy the condition of the "fourth stage" theory argument, it must be clearly proven that every leper was first syphilitic, and that none but those having had syphilis in an advanced, or third stage, have shown leprosy, the so-called "fourth stage."

But as a fact, there are plenty of cases of uncomplicated leprosy among the Hawaiians who had been and are free from syphilis. It will not do to assume that every ache and rheumatoid pain, every indurated lymphatic gland, every necrosed bone, every cracked and fissured tongue comes of syphilis. Such loose diagnosis as this deserves no refutation. Again, anyone well acquainted with the Hawaiian language knows, that while the Hawaiians have several words they apply to the lesions of venereal diseases, they have no definite and scientific knowledge of, and have no means of accurately expressing the difference between a simple non-constitutional venereal sore and a genuine Hunterian chancre, the first lesion of syphilis. As a consequence, a Hawaiian will be likely to say he has had syphilis (kaokao, or pala) when he has merely had a non-syphilitic venereal ulcer. A good knowledge of Hawaiian therefore, is essential to elicit the facts in such a matter from a Hawaiian patient.

On the theory of "hereditary immunity" of Erasmus Wilson, which has curiously enough, been adduced, the Hawaiians who have had a century of syphilis, ought by this time to have purchased some amelioration in the

disease, and it is not logical to suppose that leprosy, a vastly more severe and stubborn disease than any stage of syphilis, is related to this by any such principle as this. The argument works the wrong way.

The clinical history of leprosy and syphilis differ widely. It is impossible to go deeply into the differential diagnosis of these two diseases. But briefly :

1.—The period which the disease lies latent in the system in syphilis is reckoned only by months, whereas, in leprosy it is prolonged to years.

2.—The skin symptoms of leprosy and of syphilis are markedly different. In patients, who like many of our Hawaiian lepers have both syphilis and leprosy at the same time, there must and do occur puzzling cases, but study will disenravel the tangle.

3.—The nervous symptoms, the insensitiveness to touch (anæsthesia), and to pain (analgesia), and the various palsies, all of which are very common to leprosy and are a marked feature in this disease, are rare in syphilis, and when they do occur in syphilis, are of quite a different type and anatomical distribution. It is true that (anæsthesia and analgesia) insensitiveness to touch and pain, occur in syphilis as pointed out by Fournier, as well as in leprosy. But insensitiveness to touch and pain are *not diagnostic to leprosy* by any means, nor does Erasmus Wilson anywhere say that they are. Any physician well acquainted with the various manifestations of nervous diseases would not be guilty of such a blunder. These changes of sensibility are diagnostic of no one disease, but are common to several. Leprosy is to be diagnosticated by no one such rational symptom, but by a group of symptoms taken together. But what does Fournier say ? His words are, (*Leçons sur le syphilis*, p. 800.) Do we not see elsewhere similar phenomena produced in a good number of poisonings : poisoning by lead, arsenic, alcohol, etc. ? Pathological analogy testifies strongly in favor of the opinion we here maintain, and permits us to believe that the poison of syphilis can, like other poisons, react on sensibility.

* * * * They are not then peculiar to leprosy and syphilis.

But to illustrate the difference in the palsy produced by syphilis and that by leprosy. A certain nerve branch which supplies the circular muscle that closes the eye, is a favorite seat of palsy in leprosy, producing the familiar deformity (known by the Hawaiians as *maka-helei*) which makes it impossible to close the eye. This nerve branch is very rarely affected in syphilis. Leprosy in a large proportion of cases affects the ulnar and other nerves of the arm and hand; affections of these nerves by syphilis are pathological curiosities.

The ulcerations of leprosy and of syphilis are quite distinct and need cause confusion only when occurring in a mixed case. In leprosy the bones of the extremities are the ones almost exclusively affected. In syphilis the bones of the head and shafts of the limbs are the ones principally seized upon. In syphilis nodes are often formed, not so in leprosy.

5.—Hereditary syphilis produces a peculiar and well-known deformity of the teeth; the teeth of lepers are not affected.

6.—Again syphilis is a curable and leprosy, thus far, eminently an incurable disease. For testimony on this point read such authors as Fournier, Bumstead and Taylor, etc. To quote from Bumstead and Taylor, "we know that the great majority of cases (of syphilis) (estimated as high as ninety-five per cent.), which have been thoroughly treated are absolutely cured, and are never followed by a relapse. * * *

Save in the earliest stages, before the development of objective symptoms, the diagnosis of leprosy presents few difficulties. The Hawaiians make the diagnosis with great correctness and rarely fail.

In estimating cures, or attempts at cure at their right value, the well-known fact must always be borne in mind that recessions are the rule in leprosy, especially in the early stage of the disease. It must not be inferred that because improvement follows the use of cer-

tain medicines, even though this be found true in many cases, that such improvement is caused by the medicines used and is a cure. The improvement occurs also without the medicines. *Post hoc* is not always *propter hoc*.

Too much emphasis cannot be put on the fact that leprosy is a contagious disease or at least capable of communication from the leper to a well person. The germs lie latent for many years; but at length they produce a crop, and they finally kill. The whole history of leprosy from the earliest times to now marks it as a disease that has propagated itself by human intercourse, and has extended its ravages as its human vehicle, man, has carried it from one land to another, and that it has been scotched or killed only as the result of the most active measures of repression and isolation.

"Leprosy is contagious." * * * * "Its contagiousness demands its isolation," says Pere J. Etienne, a Catholic priest who has for ten years been connected with leprosy on the island of Trinidad.

"Our whole theory of leprosy rests incontestably on a sad fact," write Danielsen and Boeck, "it is that within the bounds where it commits its ravages, it can be made harmless to the rest of the people only by isolation; to experiment with this scourge on any other theory than this is dangerous; to risk the well being of a whole nation on the supposed truth of any new hatched, unfledged theory is reckless criminality. If leprosy is contagious why are its victims among the white people and foreigners so few? I answer 1, because white people are much more careful than Hawaiians in their choice of companions, and 2, because the whole number of whites in this country is comparatively small."

Hawaii cannot afford to retreat from the advanced position it has taken on this point. The population of these Islands is too small to be trifled with and risked in a wild experiment there is danger, it will be lost in the process. Due consideration for the welfare of our own non-leprous people and that of the increasing num-

ber of visitors and those who seek homes with us, makes it incumbent upon us to cling to the safe doctrine of contagion, which is also the plainly taught doctrine of experience in other lands. The necessity for isolation is a sad fact. Courage is needed in a nation, as in a patient, to nerve it to the dread ordeal of a painful surgical operation. However unwelcome the facts may be it becomes us, as true and honest men, to meet them squarely and not to imagine we can dodge the force of their blow by closing our eyes to the truth.

As to the question whether lepers shall be isolated in branch hospitals or at Kalawao, any one who is acquainted with that district which offers 4,000 or 5,000 acres of fine healthy pasture, woodland and valley, with mountains and ocean at hand, cannot fail to appreciate that the advantages and health giving opportunities of outdoor exercise, recreation and pure air at this place, are tenfold what they ever can be at any hospital located elsewhere. Any plan of treatment which fails to provide an abundant out of door life and exercise in the open air for the leper, can hardly attain success.

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REPORT OF THE PRESIDENT OF THE BOARD OF HEALTH
TO THE LEGISLATIVE ASSEMBLY OF 1884. HIS EX.
WALTER M. GIBSON, PRESIDENT.

OFFICE OF THE BOARD OF HEALTH,
HONOLULU, April 24, 1884.

Nobles and Representatives:

During the biennial period which closed on March 31st last, the following sums have been expended by order of the Board of Health:

	APPROPRIATION	EXPENDITURE
Leper Settlement.....	\$90,000 00	\$97,640 64
Water Supply for Kalawao.....	10,000 00	205 00
Government Physicians and Medical Treatment.....	50,000 00	54,079.96
General Expenses Board of Health.....	35,000 00	30,773 46
Building and Maintenance of Hospitals...	50,000 00	53,321 30
Repairs and Care Quarantine.....	2,500 00	2,488 20
	\$237,500 00	\$238,508 56

This is a large sum to be expended by the Government of about 75,000 people, for the care of the health of the community; the amount is about 10 per cent. of the whole revenue of this Kingdom.

In this State, it may be said that the Government undertakes the whole charge of the hospital treatment of the sick poor of the Nation. In all other enlightened States, the great work of providing for the indigent sick is mainly undertaken by the charitable enterprise of wealthy members of the community, who combine to found monuments, illustrative of the charitable and liberal spirit of the nation.

It may be said that Hawaii has to meet a calamity of wide-spread disease that would baffle the resources of private benevolence; at least 2 per cent. of her entire population being attacked by a fearful and supposed incurable malady of an exceptional character that de-

mands separation and isolation. She is laboring under a state of suffering that calls for all the energies and resources of the State, and I am warranted in saying that Hawaii has faced her great calamity bravely, and has made a provision for her suffering people that will compare most favorably with the efforts made by any other enlightened State to meet a similar exigency.

The appropriation of \$90,000 for the segregation and care of lepers, though deemed ample at the time it was voted by the Legislature of 1882, yet has fallen short of the demand upon the health authorities. The appropriation was based upon an estimated average of about 700 patients in charge; whereas there have been treated at the settlement for segregation on Molokai and at the Branch Hospital, an average of about 1,000 patients for some time past.

The report of the Marshal of the Kingdom shows that during this biennial period, 777 lepers and suspected lepers have, in accordance with orders from the Board of Health, been arrested and taken from their homes.

Of this number, 531 have been condemned, after medical examination, as lepers, and were sent to the Branch Hospital; while of these again, 365 were sent to Molokai, and 66 were discharged from the hospital on probation; 28 subsequently returning to it.

In accordance with medical opinion and report, nearly all these cases with very few exceptions, or over 90 per cent. of the leprous patients segregated during this period, were cases of several years standing, and evidently should have been segregated during previous periods.

But it is difficult to indulge in any reflection on the action of my predecessors, because the law requiring segregation has not been carried out with rigor.

For what does this law strictly require?

—That men, women, and children shall be torn from their homes, without any provision being made for the suffering and loss that may be entailed. These are

some of the experiences and consequences of the law, that have come under my own observation.

A man upon Hawaii has been suddenly taken away from his house by summary arrest, leaving behind a helpless wife about to give birth to a baby.

With great pain and risk, the devoted wife, determined to follow her husband, has undertaken the journey to the Capital, and the health authorities, unable to resist her appeal as a homeless and friendless woman, after the confinement of her companion, have allowed her to enter the hospital to join her leprous husband, there to give birth to her child.

Again, a woman in the prime of life and activity, yet condemned as an incipient leper, is suddenly removed from her home, to which the husband returns to find his two helpless little children moaning for their lost mother.

Such cases are not only real, but of frequent occurrence.

The law requiring segregation involves immense responsibilities and consequent charges upon the State.

It is not enough to care for a thousand people summarily removed from their homes, but the thousand suffering families affected by their removal demand some consideration also.

In the cases of diseases eminently contagious, such as small-pox, cholera, yellow fever, &c., which run their violent course in a few days all enlightened communities and such as are animated by the most humane spirit, have pursued and could pursue with proper regard to the safety of the community, only one course, and that is prompt and thorough segregation without regard to the individual or family suffering that may follow.

But with regard to leprosy—a disease well defined and recognized and under special treatment in Norway, India and other countries, as in this Kingdom; a disease that will permit its victim to live with ordinary enjoyment of all bodily faculties for a period lasting from five

to fifteen years ; that permits noble and self-devoted persons like Father Damien to serve at the leper settlement, even to assist at the burial of the putrid dead for the past eleven years without scathe ; and that permits the blessed Sisters of Charity at Tracadie, as with us at Kakaako to serve the afflicted with this disease, in every way even to the ablution and bandaging of most abominable sores, and to do all this without taint or injury to their pure bodies. What shall be said of such a disease? Shall it be characterized as eminently contagious?

Such a characterization is entirely uncalled for, is not warranted by experienced medical opinion, and the violent and hasty segregation which it would inspire is a wrong to a suffering community.

But the separation of the leper from the healthy, has been practised in all countries and has, in a multitude of instances, prompted the sufferers from this dread disease to retire into solitude, away from the presence of their fellow men.

The confirmed leper should be separated from the community. But there should be no alarm in consequence of the temporary presence in the street of a leper ; or on account of any ordinary intercourse with a sufferer from this disease.

According to invariable experience in the observance of this disease in this country and elsewhere, such a sufferer may pass the healthy one in the street or frequent the same room with them in the ordinary intercourse of life, or shake hands with others, or even render services to the sound, with no more danger of imparting the malady than may be apprehended from the presence of and intercourse with consumptives under the same circumstances.

However, segregation of lepers having been determined by the law and being proper and even necessary in all confirmed cases, the Board of Health has endeavored to do its duty to the community and to meet the law of the land by carrying out segregation of lepers

to an extent not accomplished by any previous health administration, and it is the purpose of this Board to fulfil its duty to the full extent that may be warranted.

In the estimates the sum of \$100,000 has been placed for the expenses of the leper settlement, which is only \$10,000 in advance of the estimate for the previous period, and as the average increase of patients at the settlement and branch hospital is fully 25 per cent. more than during the previous period, the estimate may be considered deficient. But the expectation of the Board is, that, by increased facilities of transportation and by the increase of the sources of subsistence at the settlement, the cost of its support may be materially reduced without any diminution of the provision made for the patients, and furthermore there is every reason for entertaining the hope that the disease is on the decline.

The condition of the leper settlement on Molokai, and the treatment of its suffering settlers have been variously viewed by different observers, some regarding its condition as a most praise-worthy endeavor to provide for a great public calamity, and others reflecting upon its management as a discredit to our health administration. It is proper here to say a few words in review of the history of the settlement. In January, A. D. 1865, in view of the alarming increase of the disease, segregation of lepers was determined upon by the Government and provided for by law. After a careful search of the group, the district of Kalawao, on Molokai, a territory of about 5,000 acres was selected.

It is a broad and fertile domain bordering on the sea, and its situation is admirably adapted for the purpose. It is completely enclosed on the land side by a towering rampart of precipitous bluffs, over 2,000 feet in height. The broad plain or plateau thus enclosed, and rendered comparatively inaccessible by bluff and sea, presents a variegated surface and is ever covered with a luxuriant verdure. It had been, in time past, the habitation of a numerous population of many thousands of Hawaiians.

according to the indications of ancient cultivation, who had evidently found their subsistence within its borders ; therefore, it might again, become the self-supporting home of a thousand or more people.

To this settlement the sick were at first transported, without other provision being made for them than bare subsistence and such housing as a few grass huts might afford.

The resources of the State at that time hardly warranted any greater charge than provision for the bare subsistence of several hundred people suddenly taken from their homes and isolated from the community. Up to A. D. 1878, the sick residents of the settlement were simply herded and fed at Kalawao, not provided with such necessities as lamp-light, soap and lint, without any means of transportation of their staple article of food which had to be carried by individuals on foot for many miles, and were during all the time, previous to that period, entirely without any medical attendance whatever.

But the Legislative Body of 1878, gave to the condition of the lepers a special attention. Large sums for their treatment and care were appropriated, and the health authorities consequently provided improved dwellings, additional and more varied food, with lamp-light and other necessities to improve the condition of a sick and isolated community ; so that the contrast of the earlier condition of the settlement with the present is very great.

The segregated people are now lodged in convenient and tight board houses, the supply of food is ample, and the conditions of living at the settlement in neat cottages surrounded by pleasant grounds and fruitful gardens, would be attractive were it not for the presence of the dread disease.

But this calamity has been greatly mitigated, and a comparison of the rates of mortality at the settlement for a period of two years, as shown in the appendix, will prove that the conditions of living of the lepers at

the settlement have been improved and their lives consequently prolonged.

The looker on at the present time and any one who confines his vision to what is before him without considerations of antecedent and other conditions, may find occasion to criticize and complain. Such complaint is to be found in the statement of Dr. Stallard, a visitor to these Islands whose report is annexed. The report of R. W. Meyer, Esq., the superintendent of the settlement, fully answers all the statements of Dr. Stallard. The complaint of Dr. Stallard is based upon his opinion of the need of a general medical inspection, which he proposed to supply. Such general medical inspection I deem advisable, not only for the leper settlement but throughout the Kingdom.

The Board has, during this period, increased the staff of resident physicians from seven to nineteen, as shown by an appended list. Every district is now provided with a physician subsidized by the Government, in order to supply a gratuitous medical attendance for the sick poor; and this medical duty, in accordance with the requirements of the Board, is faithfully performed by some of the resident physicians, but is said to be neglected by some, and a conscientious medical inspection would prevent frauds upon the public purse and wrong to the suffering poor.

The Board has had in view such medical inspection ever since the large increase in the number of the medical employees of the Government, and aims to have it established.

The report of the visiting physician, Dr. Fitch, of the leper settlement, also annexed, coincides in many particulars with the critical view taken by Dr. Stallard, and I regret the tone and tenor of his report, but the Board has deemed it proper to present to you the different medical opinions that have been laid before it upon our health administration.

THE SISTERS OF CHARITY.

Whilst the Board has devoted its attention to the increase of medical skill in behalf of the sick poor of the community, it has also appreciated and given a large share of attention to the incalculable value to be derived from the faithful nursing of the sick, especially by a class of noble self-sacrificing ladies known as Sisters of Charity.

In January of last year, I addressed a letter (annexed) to His Lordship the Bishop of Olba, asking his co-operation with the Board, and to meet an especial wish of Their Majesties the King and Queen, to induce ladies of the charitable Sisterhood to come to the help of the sick of this Kingdom. The worthy Bishop promptly responded to this appeal, and designated the Rev. Father Leonor as a proper agent to go in quest of this exceptional aid. His Majesty was pleased to confer a special commission upon Father Leonor, who, after arduous endeavors and many disappointing appeals had a favorable response from the Order of Franciscan Sisters, established at Syracuse, in the State of New York. Seven ladies of this Order arrived here by the "Mariposa," on November 9th, A. D. 1883, four of whom under a Mother Superior, are in charge of the stewardship of the branch hospital and three in charge of the new hospital at Wailuku, named *Malulani*, by the Princess Liliuokalani, and which is under the special patronage of Her Royal Highness.

The good sisters repeat here their wonted faithful and good work done elsewhere. The patients are loud in praise of their ministration, and it is confidently hoped that the nursing care of the Sisters will prove the immense advantage to be derived from favorable sanitary conditions and improved diet, especially in the case of the unfortunate lepers.

So it is hoped that Hawaii may yet derive a blessing from the great misfortune, by providing for it in the spirit of an enlightened and generous philanthropy, and

by proving to an observant world, that the care of the unfortunate and the appeals of humanity have a paramount influence in the councils of the nation.

In respect to the nursing of the sick, I am pleased to have to state that the Lord Bishop of Honolulu, Right Rev. Dr. Willis, has communicated to the Board a proposal that the Sisters of St. John, of England, should come to the assistance of the sick of the Kingdom.

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The humane and enlightened attitude of Hawaii is respected throughout the civilized world, and her position calls for continued sacrifices and greater activities. We must take an active part in researches to examine into the sources of diseases which attack us, and to find means for their mitigation.

An enlightened and philanthropic body of Germany has sent to this Kingdom a medical gentleman, Dr. Arning, of eminent reputation, and well qualified to study the arcana of a disease which though not afflicting Germany, yet calls forth her sympathetic, humane spirit. The Board of Health has provided for half of the emolument of the physician who is making these important medical researches, some results of which appear in a valuable report annexed.

I beg to urge that Hawaii take a larger part in the pursuit of such researches. She is attacked by a terrible enemy. Let her study everything pertaining to its origin, resources, and favorable conditions. Leprosy has, at times, attacked every race in the world; but its chief abiding places have been parts of Asia. Some of the islands of Malaysia have also been fecund hot-beds of the fell disease. In Java, and other islands of the great Archipelago, where the natives present most striking affinities with the Hawaiian race, the diseases that afflict them also afflict the Hawaiians. The Javans treat as outcasts all who are suffering with the *kudig*, or leprosy, and the unfortunate ones have voluntarily segregated themselves upon small islands, where they are supplied with the means of subsistence by their friends.

I think it would be well that the disease which commands so large a share of public attention, and calls for so large an appropriation of the public revenue should be studied by competent authorities under Hawaiian auspices in various parts of Malaysia and Polynesia, where it is found; and let Hawaii continue to maintain her honorable and enlightened position in Oceania by her advanced philanthropic enterprise.

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COPY OF LETTER TO THE BISHOP OF OLBA.

OFFICE OF THE BOARD OF HEALTH,

January 4, 1883.

THE LORD BISHOP OF OLBA.

My Lord:—The care of the sick and poor of this Kingdom, is a subject that has most earnestly enlisted the sympathies of Their Majesties the King and Queen, and awakens the solicitude of His Majesty's Government.

I have long entertained the view that, in order to combat more successfully the various maladies that beset the people of this country, especially His Majesty's Hawaiian subjects, it was not alone sufficient to have skilled physicians and ample supplies of valuable remedies; but it was still more important to have trained and faithful nurses, and I felt that nowhere could this invaluable assistance be obtained so readily as among the blessed Sisterhoods of Charity, who have, in various parts of the earth, devoted themselves to the care of the sick. I submitted a proposition to the Board of Health that I be authorized to invite ladies of such Sisterhoods to come to this country to aid in the sanitary care of the people; and provide for their traveling expenses and subsistence, and I am happy to state that I have full authority to invite eight or more Sisters of

Charity to come to the rescue of our sick people, for whose traveling expenses in first-class condition and for whose lodgment and subsistence I can provide out of appropriations for "maintenance of Hospitals," or "General Expenses of the Board of Health."

Now, my Lord, as I am aware that eminent institutions of Charity, such as I have referred to, and which this country needs, abound in the Catholic Church; and as I feel assured that your representation of our needs would be all influential, I make an appeal, and offer invitation through your Lordship to Sisters of Charity of the Catholic Church to come to the help of the sick of this country, and I doubt not I may proffer to them in advance the profound obligation and gracious recognition of their Majesties, the thanks of His Majesty's Government, and the blessings of the Hawaiian people.

I have the honor to be, my Lord,

Your most obedient servant,

WALTER M. GIBSON,

President of the Board of Health.

GENERAL REPORT BY DR. FITCH, 1884, TO THE HONORABLE BOARD OF HEALTH.

* * * * *

At the Branch Hospital for the reception of lepers, there have been 531 patients received; 37 have died; 365 have been consigned to Kalawao; 66 have been discharged on probation, of whom 28 have been re-confined; 3 have died while absent from the hospital—leaving 35 out on leave of absence for ten days at a time. Of the 66 out on leave of absence, the petitions to the Board of Health, asking for the discharge of the patients so liberated, have been signed by Drs. Troussseau, Hagan, Rodgers, Arning, McKibbin, Parker and Fitch.

Whether the medical men other than myself considered that the cases they recommended for discharge from the Hospital were cured, improperly received, or why they joined in asking the discharge of such patients, I do not know.

Four patients only have been admitted to the hospital on my individual responsibility. Of these four, one is dead, two remain in the hospital, and one is included in the list of those out on leave of absence. During the four months in which I have acted as one of the Examining Board in conjunction with Drs. McKibbin and Trousseau, it was fully understood that two of the Board must agree that the person examined was a leper before they could be admitted to the hospital. This understanding was, to the best of my knowledge and belief, fully carried out. The four I admitted came in before I was a member of the Board of Examiners.

During the last quarter we have had the services of the Sisters of Charity in nursing the sick, and only those who have seen the devotion of these noble women to their work, and the blessed results of their labor, can form any conception of the worth of their efforts to the poor suffering creatures in their charge. I trust the branch hospital, under their ministrations, will prove a haven and shelter to some of the most unfortunate of mortals.

Before their arrival, Mr. Van Giesen had the entire nursing, providing for and watching over of this extensive hospital, as well as the construction of the buildings and filling the yard, the compounding of drugs and taking photographs, as well as keeping the books and records. How he ever accomplished the work he did has been to me a constant source of wonder.

But no one man, however faithful, can do the work which a large number could well have been employed at, and the coming of the Sisters has been a great relief.

Only the kindly, gentle nature of the native race has enabled us to get along as has been done.

I trust that the condition of the hospital will be found

very satisfactory. The unfortunate situation of the institution cannot be better shown than by stating that during the great southerly gale in December last the tide backed into the yard to the depth of nearly three feet, there not being a dry spot in the enclosure, and only the most strenuous exertions of the steward and the inmates saved the place from almost complete destruction.

The site is most wretchedly chosen, and should be abandoned.

But while the condition of Kakaako as to nursing and care and food has been, to some extent, satisfactory, Kalawao has been directly the reverse.

For nearly eighteen years that place has been the chosen spot for casting out to a lingering death many hundreds of the most unfortunate of earth's suffering mortals. In addition to the inevitable suffering which is the constant feature of leprosy, no care has ever been exercised to make the condition of lepers even tolerable.

But some may ask—if I see such cases, why I do not remedy them? I only wish some good genius would tell me how it could be done. Let me give ever so many orders to rectify this wrong or that, who is to carry my orders out?

At best, they are only given to poor, sick, miserable creatures as unable to care for themselves as they are for others.

And the Board of Health are just as powerless as I am in this matter. Who will volunteer to go there to act as nurses? What wages would hired nurses ask to do such work? There are an average of 750 patients there, and they are scattered over near three miles of territory; what an army it would take to make things *even tolerable*. As to the *kokuas*, or native nurses, who are there, the most of them are there to live off the rations provided by the Government for the sick, and, as a rule, only add to the unparalleled licentiousness of that hideous brothel. Some work they do; but when

it comes to systematic care of sick people, they are thoroughly worthless.

* * * * *

But finding fault with the past is useless unless it lead to good results in the future. What can, what should be done, to correct these terrible wrongs? My plan would be to procure a suitable place, not less than five nor more than ten miles from Honolulu, to embrace at least fifty acres of land, having suitable natural drainage, with water supply in abundance, and then make a perfect enclosure, divided into separate yards for the separation of the sexes, the light from the bad cases, and where the viciously inclined may be held in control. Then, by putting say 30 or 40 patients under the charge of a Sister of Charity, to be watched over and attended to, and as soon as a case needs more care, have the patient removed to a central hospital where good order, cleanliness and as much comfort, if such be admissible, as the disease permits its victim to possess would be had.

* * * * *

But when I ask to have the sexes effectually separated, I ask what common business prudence only suggests. Separation of the sexes is an absolute physical impossibility at Kalawao, with the power at the command of this Government.

It is an unalterable law of nature that the unclean cannot give birth to the clean, and in consonance with this law, we find that after eighteen years existence of the leper settlement under the conditions I have already mentioned, there are now there 19 living children born of leper parents at the place, and 32 children born of leper parents outside, who have gone there to reside with those parents. Some, besides, whose mothers or fathers, after the birth of the child, have married lepers, have gone also. Furthermore, there are 35 *kamainas*, whose lands have not been condemned, who are living there surrounded by and in continual intercourse with lepers for the last ten years; besides, from the very

first, numerous *kokoas* have been permitted to live there. And yet this has been called segregation; and there is a political party here who established the place, and whose war cry is: "We will never give up until every leper in the Kingdom is sent to Kalawao, and thus the land become clean."

Verily, sending hundreds to a leper manufactory to establish cleanliness in the land is practising segregation and encouraging virtue, with a vengeance.

Yet, to appeal to those who, through the press and by word of mouth, have established this order of things and now clamor loudly for its continuance, is hopeless. * * * I do not ask to make segregation less perfect; on the contrary, I ask to establish a segregation—which never has existed—and as a first condition and a necessity, I ask the chance to make segregation possible.

No one will willingly consent to have loved ones removed from them to suffer under such a state of affairs as has existed from the start at Kalawao, nor should they consent. No person with a disease as loathsome as leprosy has any right to be at large in a community; and while I do not believe leprosy a contagious or infectious disease, I do believe every leper should be segregated; but while matters are in the condition I have shown, it must be clear that to practice segregation, or carry it out efficiently, is about as severe on those having the matter in charge—providing they have any humanity about them—as it is on those to be segregated.

To show how this matter of segregation has been managed in the past, I submit this statement:—

Kakaako was opened for the reception of patients on December 12, 1881. Previously to that time, Kalawao had been in existence as a leper retreat for more than fifteen years. During this period there had been 2,499 persons sent there—or an average of 166.6 per year. Kakaako received from December 12, 1881, to June 1, 1882, 103 patients; or, adding to this the former number for the first near sixteen years that segregation was

said to have been so efficiently carried on here, 2,602 cases—an average of 162.62 cases per year. From June 1, 1882, to April 1, 1884, 427 patients were received at Kakaako, and a number went to Kalawao direct. I do not know just the exact number, but we shall be safe to say that for the twenty months named the number of 450—or an average of 200 per year. Comment on this showing would be superfluous. For the first year after my work at the dispensary began, new cases of leprosy were constantly coming in for treatment.

For the last year few cases have come in. I am fully convinced that during a year last past not a dozen new cases have made their appearance in Honolulu. In fact, I fully believe that before the expiration of another biennial period every one will be able to see that this dread scourge has spent its fury. God grant that day be dawning indeed, as I fully believe it to be in this regard.

EXTRACTS FROM REPORT OF J. H. VAN GIESEN, 1884.

Improvements have been made since my last visit, nearly one year ago. There is no actual want, nor much misery; the patients are gradually getting their little homes, patches of potatoes, and becoming “kuo-noono.” The water-pipe and harbors I would recommend to your attention. I spoke to Meyer about the harbor, and he said he was going to do something during the coming April. Meyer is a very conscientious man, and evidently thinks he is doing what is right; but he is at the settlement so little of his time that he has not a good idea of what is going on. In speaking with Meyer, he said he did not have charge of the settlement—was only agent for the Board of Health.

There is no necessity to have a doctor. What is wanted is more nurses; houses should be kept more clean, more whitewash used. The lepers themselves will not do this unless there is some one present to compel them to do it. The supply of provisions and furnishing seems to be tolerably good; the main trouble lies in not having regular and direct communication when and where required. Meyer has bought a German surf boat, now lying at Kaunakakai, and is going to have her painted and placed on the pai-ai route; but this is hardly the thing. Would advise the immediate purchase of a water pipe, and have it laid by leper and kokua labor. The old pipes could be taken up, and new couplings made and used for branch pipes; at present it is a wonder that any water is obtained at all, the way they have tied up with old rags the places that are broken. The lepers who have come with me are perfectly satisfied with the place, and have selected their future house sites. They, on their return, will tell others, so that I can predict, when the pipes are laid, nearly all, if not all now at Kakaako will be willing, if not beg, to go to the settlement. Would advise to let them go with their wives and husbands, but no children. By doing this, a home feeling will be promoted, and a better state of morals kept up; they will be more quiet and contented, and the best nurses will, in this manner, be obtained.

DR. ARNING'S REPORT, 1884.

To His Excellency Walter M. Gibson, President of the Board of Health.

SIR:—I have the honor to submit to Your Excellency a report on my work in connection with leprosy, carried on during my stay on these Islands.

After my arrival, about the middle of November last

year, and pending the erection of a suitable locality for carrying on my work by the Government, I endeavored to inform myself on the different views held in regard to the disease and the modes of dealing with it.

Several things at once struck me very forcibly. Firstly, that I had either been misinformed by an excellent authority on an exceptional degree of malignancy which leprosy showed on these Islands, or that this malignant type and quicker course of the disease had, with the more general spread, gradually given place to the eminently chronic character, which it exhibits in its older and established domains. My informant was Dr. Hillebrand, and he wrote to me from his experience, gathered more than fifteen years ago; that on these Islands, and at his time, leprosy killed its victims within three to five years, whereas I now find the average run of a case of leprosy is between five and ten years. It will, of course, be extremely difficult to get at exact numbers in this respect, as leprosy is not a disease where we are able to fix a well-defined time of commencement; but we shall have to attach value to such a statement by an intelligent observer, even without its being based on statistics, and infer therefrom that leprosy actually exists in a milder form than it did during the first decades of its spread on these Islands.

I was further surprised to find it accepted on some parts that the disease is a certain form or stage of syphilis—*i. e.*, is in every case dependent on previous syphilis, and if at all communicable, could only be transferred by syphilis.

I avow that this hypothesis, which, if true, would entirely overthrow our hitherto accepted ideas not only of leprosy, but still more so of syphilis, seem to me to be so extraordinary and self-condemning that it would scarcely necessitate my entering on the subject in this report; but, on the other hand, the theory has been most energetically brought before the public and found believers, so that I consider it my duty to support with the full force of my opinion the endeavors of other

members of the medical profession who have already some time ago refuted this idea. The theory is, perhaps, not quite as harmless as many would believe, as it has led, and may further lead, the public to consider leprosy as an outcome of licentiousness, which term certain classes of society unhappily seem to use as a synonym of syphilis, and to look upon the unfortunate lepers as the victims of their own or their parents' transgressions.

Singularly enough, it never seems to have struck the promoters and believers of this theory that in its impliedly given the clue to the cure and eradication of leprosy.

If leprosy be the outcome of syphilis, then all our efforts should be directed towards the latter, which happens to be one of the diseases most amenable to treatment; then all the laws and regulations of private and public sanitation should aim at the prevention of the spread of syphilis; then we should segregate all persons suffering from syphilis, and have syphilis settlements instead of leper settlements.

I will not go into the details of the difference of syphilis and leprosy in clinical and pathological aspect; but I wish it to be understood that neither clinically nor pathologically does the leprosy of these Islands present any peculiar feature or combination of symptoms which any physician accustomed to see and treat syphilis would recognize as belonging to the latter. Moreover, I am led to believe from what I have observed here myself and gathered from other physicians, that syphilis is not nearly so prevalent here as has been generally stated. An inquiry on this subject, issued by the Board of Health, would, perhaps, recommend itself, and very likely lead to a correction of the general opinion in this matter.

It is evident that one case of leprosy brought on in a subject where there is no trace either of hereditary or acquired syphilis will overthrow the theory of the unity of the diseases, even if hundreds of cases could be

brought forward where there is a history of previous syphilis. I have already been successful in collecting such evidence.

In the beginning of December I could start my microscopic work. I was then able to prove the presence of the same micro-organism which Hansen and Neisser first demonstrated in leprous tissue, and which which has received the name of *Baccillus Lepreæ*. I have now examined leprous tissue from Norway, Spain, Syria, Surinam, and these Islands, and find the same changes due to the invasion of the same germ. At first I was baffled in my attempts to find the bacillus here. The delicate manipulations you have to apply to the tissues in order to show its presence seemed to work differently here than at home, but by varying the methods I have succeeded. Following up the spread of the bacillus in the various tissues gained from three post-mortem examinations—(two at Kakaako and one at Kalawao)—and by excisions of tubercles from the living, is at present the chief work I am occupied with; the aims are manifold. Firstly, to gain knowledge of the paths the germ follows in the organism, and the changes it brings about in the tissues of the body; then to gather information as to the life history of the germ itself; and last, but not least, to see to what extent the presence of the baccillus can be used as a practical test for leprosy.

With regard to this latter proposition, I am able to say distinctly that I have found the baccillus in every case of tuberculous leprosy I have examined, and that it cannot be found in any other disease. As yet, I have not been able to prove its presence in the blood or in the spots and sores of anæsthetic cases. In these cases I believe I shall find the baccillus in the nerves supplying these parts with vitality, and I have good reasons to hope that I soon shall be able to publish proofs of this opinion.

I have further extended my microscopic examinations to other diseases which have of late been attributed

to the invasion of a healthy organism by parasitic germs. In three cases of consumption occurring amongst natives, I have found Koch's bacillus tuberculosis; likewise in gonorrhoea and pneumonia the same germs that have been proved to cause these diseases in Europe. Nor have I failed in detecting in various skin diseases the itch, the white *kane* spot, and the *puupuu*, which are so prevalent amongst the natives, the same closely allied animal and vegetable parasites which are known to produce corresponding diseases in other countries.

A current belief that leprosy has been extensively propagated by careless and indiscriminate vaccination, induced me to try and vaccinate lepers with a view of possibly finding the germ in the pustule. Unluckily, although I tried to procure the best lymph, the vaccination did not take in any one of the cases. The experiments will be repeated with new lymph I have ordered.

Inoculation of leprosy on all sorts of animals—dogs, cats, rabbits, guinea-pigs, birds, and fish—has of late been perseveringly tried by quite a number of authorities, so far without result as regards general infection. I have procured a monkey for carrying on these experiments.

With a view to ascertain what becomes of the millions of germs a leper harbors after his death, and whether there is a possibility of their infecting the soil, I have, on a visit to Molokai, caused a grave to be opened in which a leper had been buried a year ago. A portion of the crumbling dust was removed, and will be examined in due course.

My time during the next six months will be chiefly devoted to cultivation experiments—*i. e.*, to try and grow the *Bacillus Lepræ* on specially prepared substances outside of the human body. This work is of the most tedious and delicate nature, and always associated with many discouraging failures; but, nevertheless, it has to be undertaken, forming an essential part of the modern methods of investigating disease.

As regards treatment of the disease, *I consider it altogether unwarrantable to call leprosy incurable*, and simply to remove the afflicted out of sight. This is a remnant of mediæval barbarism which every professional man ought to oppose, more especially so in our relation to a race which has had our civilization forced upon it, and which is accustomed to look up to us for help and support. Is it not fostering their innate sense of indifference to hygienic principles, instead of setting them a fair example, when we gather together very nearly a thousand suffering people in a lonely spot, and let them have only a flying visit of a doctor once a month. We medical men consider it one of the foremost principles of our work to grapple with disease to the very last; and if even in acute cases, where we see death imminent, we think it right not to give in, but to try and stay the fast ebbing current of life; then much less should we leave fellow-creatures suffering from an eminently chronic disease to succumb gradually, without even an effort to help them.

And for the nonce, even accepting the oft-repeated assertion, that both history and personal experience show us that we have to deal with a disease which we are not able to arrest by general treatment; there will be work enough in store for us to help these outcasts through other troubles not in direct relation to leprosy. But we ought never, for a moment, to accept the saying of the incurability of leprosy as true; but ought to go on fighting against it. Perhaps we have been on the wrong track of treatment, and there is yet a solution of the problem to be found. The recent experiments concerning the germ nature of the disease may be the means of showing us the path of rational treatment; and they must and do give a new impulse and new encouragement to us to persevere in trying and experimenting. But then we must not expect to find an arcanum, an oil or extract with very nearly supernatural qualities, as has only too long been done in connection with this most intractable disease; but must act system-

atically on a rational basis, individualizing the cases and trying to benefit them by saving what can be saved of their vitality. And then there is a vast field for local surgical treatment, apart from general medication. What should we think of the surgeon who would leave large ulcerating surfaces and sores without attempting to heal them, or would not timely remove a bone which is mortified by *Syphilis* or *Tuberculosis*, and is keeping up painful and detrimental irritation, and should it be otherwise in leprosy? Why are we entitled to leave scores of leprosy eyes to decay and waste away, while there is a chance of saving, if not at all, at least a part of them, by skillful surgical interference. One of the most common operations in ophthalmic surgery, is for an inflammation of the inner eye due to syphilis, and by it hundreds of eyes are saved. And for a similar inflammation occurring in leprosy, we should do nothing but stand and watch blindness slowly but surely coming on.

I find there is no foundation in saying that lepers will not stand surgical interference. Excisions of tubercles and excision and stretching of nerves have been performed by me, and the wounds healed as readily as in other individuals.

Besides this there is another potent agent which ought to be extensively applied in treating this disease, viz: electricity. I have, in two cases, by a three months' course of electrical treatment, been able to restore, in a marked degree, the muscular power of withered leprosy hands; and I know of other cases where this treatment has been similarly efficacious.

I think it is self-evident that any bacterial disease is more likely to be successfully combatted in its initial stages, before the organism has lost its power of resistance and recovery, and we ought, therefore to look out for cases presenting the very first symptoms, especially in children and young people.

That there are numerous such cases amongst the rising generation, no one, who has paid any attention to the

question, can deny. I had, before the official examinations of the school children were ordained, examined two of the schools in this city; and found, in one of them, amongst ninety-five scholars, five; in the other, amongst 15 scholars, three cases of initial leprosy; which would be a ratio of 7.27 per cent. I then and there advised these patients to be removed from the schools; since then a few more cases have been removed by the examining physicians. What strikes me as particularly necessary at the moment, is to provide suitable accommodations for these children. It seems to me to be perfectly unjustifiable to take these children out of the schools on account of the danger of their communicating the disease to their school-mates, and to cast them back on their families. The danger to the community is not lessened in the least. These are not such cases as have hitherto been segregated as confirmed lepers; indeed, some of them appear to be, otherwise, in splendid bodily health. And surely it would be more conducive to their maintaining this general good health, if they could be kept in their regular training with its beneficial influence on the mind and body, instead of idling away their time at home. We require a home for these children where the regular school training is kept up as far as possible; where there is a reliable person to look after them and see that the orders of the attending physician are carefully carried out. This home ought to be as cheerful a retreat as possible, in a healthy location, where the inmates can roam about within certain limits, and where there is plenty of good food and air. Decidedly advanced and bad cases ought to be kept entirely out of sight of these children.

I will not dwell in this report, on the merits and drawbacks of the Molokai settlement and the branch hospital at Kakaako, as they present themselves, to my opinion, but I believe that instead of enhancing it these two institutions detract from each other's value, and

that this condition will last as long as Kakaako is kept up as an over-crowded leper settlement.

It will be seen from the foregoing, that I advocate segregation; and I may be asked first to prove the actual power of contagion in leprosy. To this I reply: that from what we already know of the nature of the disease, we are entitled to enforce segregation; even without the question of actual contagion being definitely settled. We know that leprosy is dependent on the invasion of the human body by a microscopic germ which has the power to increase indefinitely in the tissues. Therefore we must look upon every single leper as a hot-bed of disease, quite independently of the exact condition under which he can transmit it to others. He, at any rate, breeds and multiplies a poisonous germ; and is, on this account, dangerous. A similarly infested locality we would hasten to quit, as we are not able to remove it from us. But in the case of leprosy, which is bound to individuals and not to localities, it is more expeditious to remove the infected individuals from the unaffected members of the community.

Hoping that Your Excellency will favorably consider this report, and the views and suggestions therein contained, I remain, yours most respectfully,

EDWARD ARNING, M. D.

Dr. W. Hillebrand, a former resident of these islands, and very highly esteemed in this community, called the attention of Mr. Gibson, President of the Board of Health, to the importance of the Government engaging the services of Dr. Arning in a letter, dated Montreux, Switzerland, Dec. 16, 1882, from which are extracted the following valuable and interesting statements:

“That in consideration of the important results for the welfare of Hawaiian people, which are likely to be derived from the intended investigation on the contagium of leprosy, the Hawaiian Government declare itself ready

to assist Dr. Arning, either by a direct grant or otherwise." "The sum in question is very moderate, simply large enough to cover the expense of living on the Islands for the space of nine months. I imagine that you will be justified to set aside a small portion of the money appropriated by the Legislature for sanitary purposes. If not, you can appoint him physician to the leper settlement, where Dr. Arning will be obliged to spend the greater part of his time.

In order to impress you with the importance of the results which may flow from an investigation of this kind, I shall have to say a few words of its character and range. It will not be confined to inoculation of animals, but will extend over all the possible bearings of the contagium. The germ will be propagated outside of the human body, cultivated in breeding stores of particular construction, in liquids of different chemical constitution. If inoculation succeeds in the first instance, it will be repeated with the germ modified by these measures; to learn if they lose or increase in power, for as it may be taken for granted that simple contact with the leprous tissue of the living body does not communicate the disease, it is to be presumed that under certain unknown conditions, probably outside of the human body, the germs acquire an unusual energy, under which they develop their contagious quality. For this purpose the soil of the leper graves will have to be examined; houses which have been inhabited by lepers, or in which the disease is known to have taken its commencement, will have to be searched for extra corporeal breeding places. I will only refer here to a popular belief prevalent in southern China, that the disease spreads from the decomposing urine of lepers. The history of individual cases will have to be followed up with a view to all the possibilities which modern research of other disease germs has revealed.

Some startling discoveries, which at the same time open quite good views; have of late years been made with regard to the germs-bacteria of that most deadly

disease called malignant carbuncle. These are now proved to be identical with the innocuous bacteria which stick to dried grass or hay, and are present abundantly in the lower strata of the atmosphere in all countries covered with vegetation. These latter have been converted into deadly poison by successive breeding of generation after generation in solutions with gradually increasing proportions of albumen, and vice-versa. The former have been converted into innocuous hay-bacteria by breeding in solution with gradually diminishing albumen. A similar relation is supposed to exist between the germs of variola and vaccine although the proof has not been furnished yet.

That from researches of this kind finally must result a true knowledge of the natural history of that vegetable organism which originated the disease called lepra, is self evident. The only question is, after how many years? At the same time, it is evident that the knowledge of its natural history—and only this—will point out with certainty, the sanitary measures which are to be adopted toward warding off the disease preventing its spread and, I do not hesitate to say, finally affecting its cure.

Probably you have read in the papers of the discovery by Dr. Koch in Berlin of the bacteria which cause tuberculosis of the lungs, consumption, well, he has demonstrated by exclusive experiments, not that the disease is inoculable—for that discovery had been made before him—but that the bacteria are the sole carriers of the disease, and that they are present only in the tubercular deposit, not in the blood. In no sputum of a tubercular lung are they wanting, and from the dried sputum they pass in the atmosphere of confined rooms, where they may, but need not necessarily, become propagators of the disease, for they require a temperature of at least 40°C . in order to live and propagate, you will see at a glance, what a hopeful field this knowledge opens to preventive measures against the spread of this dreadful disease.

On the other hand, the germs being confined to the lungs, at all events in the earlier stages of the disease, this has to be attacked by local means, inhalation and inflations. And as known already an organicide which kills the micrococcus cell in the case of malaria without damaging the blood-cell or globule, the source of human life, why should one despair of finding a corresponding remedy in the case of tuberculosis or lepra?

The foregoing remarks will convey to you, my dear sir, a due appreciation of the importance of the work, and also of the difficult and complicate nature of the investigations. Only men in possession of all the specific knowledge obtained thus far, experienced in the use of the microscope and practically trained to the different methods of experimental research are competent to undertake it. Such a man offers himself to you, commissioned by one of the highest scientific bodies, from no motives of gain but prompted by the simple enthusiasm of science and philanthropy. I am sure that you will not grudge him the very small contribution which is needed; 1,500 to 2,000 dollars will cover the whole expense, I should think. The French Government has assisted Mr. Pasteur to the extent of over 100,000 francs during the last two years, to enable him to carry on experiments tending to impart to sheep immunity against a contagious disease. How much more cogent reason to assist experiments tending to the salvation of a nation of men?

OFFICE OF THE BOARD OF HEALTH,
HONOLULU, February 1, 1883.

DR. HILLEBRAND,

Montreux, Canton Vaud, Switzerland.

DEAR SIR:—I have received and read with the greatest interest your letter of 16th Dec. ult., in which you inform me of the mission Dr. Arning desires to undertake to this country, and of the aid he may require, and

of the nature and importance to this country and to science, of the work he will undertake.

It gives me great pleasure to be able to assure you at once that if Dr. Arning comes here for the purpose of studying the natural history of the contagium of leprosy, he will receive from the Board of Health every assistance they are in a position to give him in the way of premises and facilities for carrying on his investigations, together with a salary as a physician under the Board, during the time he is thus occupied, of say \$150.00 per month. For the purpose of giving him full opportunity for research, he may, at his choice, find a place on the medical staff either at the branch hospital at Kakaako or at the leper settlement.

An investigation by a competent person of a nature such as Dr. Arning desires to engage in, is a matter that I have long desired to see taken in hand, and the Board has been anxiously considering how so desirable a work could be carried out. Dr. Arning may therefore feel assured, that if he comes here for this purpose, he will receive the cordial and earnest co-operation of the Board.

Accept my thanks for the interest you have taken in this matter, and for the instructive letter you have favored me with. It gives me personally the greatest pleasure to be able to respond to your suggestions with prompt compliance.

I remain, dear sir, yours sincerely,

WALTER M. GIBSON,
President of the Board of Health.

AMENDMENTS TO THE ACT TO "PREVENT THE SPREAD OF LEPROSY."

Sections 5A and 5B were amended by Act of 1870, Ch. XXXIII, to read as follows:

SECTION 5 A. No person, not being a leper, shall be allowed to visit or remain upon any land, place or inclosure set apart by the Board of Health for the isolation and confinement of lepers, without the written permission of the President of the Board, or some officer authorized thereto by the Board of Health, under any circumstances whatever, and any person found upon such land, place, or inclosure, without a written permission, shall, upon conviction thereof, before any police or district justice, be fined in a sum not less than ten nor more than one hundred dollars for such offense, and in default of payment, to be imprisoned at hard labor until the fine and costs are discharged in due course of law.

SEC. 5 B. It shall be lawful for the Board of Health, through its president, to make and promulgate such rules and regulations as may be from time to time necessary for the government and control of the lepers placed under their charge, and such rules and regulations shall have the same force and effect as a statute law of the Kingdom; Provided, alway, that the sanction of the King in Cabinet Council, be given thereto, and that they be published in two newspapers, published in Honolulu, one in the Hawaiian, the other in the English language.

Section 6 repealed 1874, Chapter XI.

SEC. 300. It shall be the duty of every physician having a patient infected with the small-pox, or any other disease dangerous to the public health, to give immediate notice thereof to the Board of Health, or its nearest agent, in writing, and in like manner to report to said Board, or its agent, every case of death which takes place in his practice, from any such disease; and every physician who shall refuse or neglect to give such notice, or make such report shall be fined for each offense a sum of not less than ten, nor more than one hundred dollars.

SEC. 301. It shall be the duty of every householder

keeper of a boarding or lodging house, or master of a vessel, to report immediately to the Board of Health, or its nearest agent, any person in or about their house, or vessel, whom they shall have reason to believe to be sick, or to have died of, the small-pox, or any other disease dangerous to the public health, under a penalty of not less than five, nor more than one hundred dollars for each offense.

AN ACT TO AMEND SECTION 4 OF CHAPTER 62 OF THE
PENAL CODE.

Be it Enacted by the King and the Legislative Assembly of the Hawaiian Islands, in the Legislature of the Kingdom assembled:

SECTION 1. That Section 4 of Chapter 62 of the Penal Code be and the same is hereby amended so as to read as follows :

“SEC. 4. The Board of Health is authorized to make arrangements for the establishment of hospitals on each island where leprous patients in the incipient stages may be treated in order to attempt a cure ; and the said Board and its agents shall have full power to discharge all such patients as it shall deem cured, and to send to a place of isolation contemplated in Sections 1 and 2 of this Act, all such patients as shall be considered incurable or capable of spreading the disease of leprosy.”

SEC. 2. This Act shall become a law from and after the date of its passage, and all laws in conflict with the provisions of this Act are hereby repealed.

Approved this 11th day of August, A. D. 1884.

KALAKAUA, REX.

CASES RECORDED AT KAKAAKO.

The following are taken from a record of cases preserved at the Branch Hospital, Kakaako, during the years 1882 and 1883:

KINE.—Female; aged 18; sick 4 years. Is the last born of 17 children, all dead, by a strong, fat, short mother and tall, slim father, both living. Has lived and intermingled with lepers, but none of her relations, as far as she knows, are yet lepers.

KAMALUNUI.—Male; aged 24; sick 4 years. Is the eldest brother of another leper at the hospital, that is a half brother, by the same mother and a different father. There is also another older brother, a confirmed leper on Molokai. Is one of 12 children by two fathers from same mother. These children from both fathers show the same tendency to leprosy as if they had only one. There are only four boys now living and three of them show signs of leprosy. The remaining brothers and sisters all died from a few days after birth up to six months. The present case has lived, ate and slept with lepers.

KAPAHU.—Male; aged 29; sick two years. Mother and younger brother a leper.

KALEMANA.—Male; aged 42; sick 1 year. No leprous relatives, but has lived with the disease.

KALANIMEA.—Female; aged 23; sick 2 years. Second child of apparently healthy mother and weak, sickly, asthmatic father. When young much subject to large scaly eruptions on body and head. Led a dissolute life, with usual results. Has lived with adopted mother, who was a leper, who fed her from her own mouth (pu-a). Three of her own uncles on mother's side have been lepers and sent to Molokai.

KAHOE.—Female; aged 23; sick 18 months. Had lived, ate and slept together with her mother-in law who was a leper.

KANA.—Female; aged 16. First of two children by small, thin mother; father died when she was young. Grandmother on father's side was a leper at Kalawao. Patient had not lived with lepers to her knowledge.

LUAHUWA.—Female; aged 14; sick 1 year. Is second born of 11 children by tall, slim mother and short, thickset father, who denies that any of the family or relations ever had leprosy or had resided with it.

KEKUL.—Male; aged 25 years; sick $2\frac{1}{2}$ years. Father died at Molokai a leper. The other children do not yet show symptoms.

KAHALEKUEWA.—Male; aged 17; sick 2 years. Child of leprous father, now dead. Mother strong and apparently healthy. There are 13 children, 4 of these—older than he—have died of leprosy, but the younger have not yet shown any symptoms.

KANE.—Male; aged $5\frac{1}{2}$ years; sick $1\frac{1}{2}$ years. Parents died when he was young. His first wife, now dead, was a leper.

LOXO.—Male; aged 30; sick 3 years. His own father was a leper. Has three living children, but neither they nor other members of the family show symptoms of the disease.

KAILIANU.—Female; aged 11; sick over 1 year. She is the only child of her mother who died of leprosy.

KEAWE.—Male; aged 9 years; sick 4 years. Grandmother on mother's side was a leper on Molokai, but did not show symptoms until she was a grown girl. The other near relations are strong and healthy.

HALOE.—Male; aged 15 years; sick 1 year. Father, mother, sisters and brothers healthy. Lived and took care of a bad case of tubercular leprosy four years ago (now dead).

POHIA.—Female; aged $9\frac{1}{2}$ years; sick 5 years. Father died a leper on Molokai. Leprosy had shown upon him three years before this child was born, and

immediately she was born she was taken away by a healthy couple and brought up by them. Two children were born before symptoms showed on father, one died from an accident, and the other is still alive. After the appearance of the symptoms twins (in addition to present case) were born, one died six months old, and the other one year. Mother died of consumption.

MAKAIE.—Male; aged 80 years; sick 10 years.

PAAHAO.—Female; aged 63 years; sick 1 month.

Husband and wife, and lived together for fifty years. "They, as husband and wife, have lived a very good life, for natives, keeping themselves respectable." None of their relatives have leprosy, nor have they lived with it.

KEAO.—Female; aged 45 years; sick 1 year. Admitted January 24, 1883.

Small light copper-colored tubercles on back and thighs, red discolored blotches with partial anæsthesia, also total anæsthesia of top of left foot. Became a prostitute 11 years of age and contracted a disease. Chancre, non-suppurating bubo on right groin; formerly, when small, had foul ulcers on legs and arms. Though at times apparently cured these ulcers would return at intervals of a year or two up to the present time. She married, in the interval and became pregnant, but the child only lived till it could crawl, then died. It was apparently healthy but drooped away, with fever perhaps. She is much troubled with costive stools; no appetite; her menses free, slight pains, but very dark and coagulated in clots. Parents strong. Says that none of her relations ever had leprosy. First symptoms of this trouble were cold chills towards night. Anæsthesia appeared gradually; does not increase at present. Has been treated by Dr. Fitch for five months without much change.

Died April 3, 1883, of exhaustion from syphilitic fever.

PUUPUU.—Female; admitted March 10, 1883; aged 40; sick over one year.

Sore on hands; discharged bones from fingers, same distorted; plantar ulcer on right foot, stupid and anæsthetic, hopeless. *Is wife of Kekalohi*. Transferred to Molokai.

KEKALOHI.—Male; aged 47; sick 2 years. Partial loss of eye-brows; face, flat, tubercles and swollen, red flush; fingers tapering badly; large flat tubercles rounded on edges on legs; epigastrium and back bad; arms the same. Had bubos, chancres, gonorrhœa, and stricture. Hopeless. Tubercles with partial anæsthesia. *Husband of Puupuu*. Died August, 1885.

KAUHI.—Male; admitted March 10, 1883; aged 19; sick $3\frac{1}{2}$ years.

Nearly total loss of eye-brows. Lost bones from fingers of the right hand leaving them shortened up with slight signs of the nails yet small and deformed. Anæsthesia of same reaching up nearly to the elbow. Indolent, eating, irregular ulcer on left breast acting as a vent. Feet immensely swollen and black. Ankles dry, cracked and shining. Hopeless. Father died of asthma, and mother of large ulcer on left breast. Died from exhaustion March 25, 1886.

STEPHEN KIWAA.—Male; admitted March 10, 1883; aged 23; sick over 4 years.

Contractions of the flexor tendon of both hands with enlargements of ends of fingers. Loss of bones from toes of left foot; plantar ulcers right and left. Anæsthesia on both forearms up to the elbows. Eyes watery and lower lids drawn down. Atrophy. Paralysis of left face well marked. *Grandmother a leper on father's side*. Had many bad sores on entire body when 6 years old with scabby eruptions when very small. Hopeless. Molokai.

AA.—Male; admitted March 10, 1883; aged 29; sick 16 years.

Paralysis of left face with anæsthesia. Contractions of the flexor tendons on fingers of both hands. Has

lost parts of bones from fingers, distorted, also first and second points of first finger of right hand. Right foot swollen and large. Plantar ulcer. Blanch and pink spot like ring worm on epigastrium. Has been a sailor on whalers and visited California and other places. Died six days after transfer to Molokai.

KAAILUWALE.—Male; admitted March 10, 1886; aged 45; sick 9 years.

Disgusting sores on right hand and right foot. Paralysis of right side and face. Drooping eyelids. Hopeless. Plantar ulcer on right foot. *Thinks he obtained this illness from living with lepers.* Parents both healthy. To Molokai. Died 1885.

IIANA.—Female; age 30; sick 3 years. Nearly total loss of eyebrows. Tuberculous cheeks and forehead; fingers tapering; skin loose, dry and furrowed. Lobes on ears but slightly elongated. Small tubercles on back. *This is the first case not preceded by chills, etc.* She injured her thumb under the nail by pricking it with a needle and became very sore and shortly afterwards her eyebrows began to fall and tubercles appear. She probably, from her description, inherited syphilis from her father. To Molokai.

KAKE.—Female; admitted November 13, 1883; aged 46; sick 8 years.

Scar on nose from former ulcer with sunken corner; nearly total blindness, cheeks swollen and tuberculous with partial anæsthesia of the same. Fingers tapering. Tubercles and anæsthesia on the thighs and back prominent and partial on the epigastrium and breast, arms and wrists. Hopeless but not bad. To Molokai.

KAHANAAUPUNI.—Female. Her only living child out of a family of nine. Admitted March 13, 1883; aged 23 years; sick 9 years.

She showed signs of the disease about two years before they appeared on the mother. Same general diagnosis as mother. Thickness, tubercular form in skin of face with anæsthesia, fingers tapering. The mother first showed red flush and thickening, while this child had

blanched cheeks first which afterwards developed into flush, then tubercles. Anaesthesia on arm with slight discoloration and rough. Hopeful. Small tubercles, syphilitic ears, watery eyes, etc. To Molokai.

MIELE.—Female; admitted March 9, 1883; aged 46; sick 7 years.

Paralysis, drooping eyelids with atrophy, eyes watery; a former severe ulcer on left wrist, treated at Queen's Hospital, now well, but has the left hand anaesthetic and fingers distorted; flexor tendons contracted to palm of hand; immense scars on knees; glossy knees and legs, ditto on feet, very dark. *Leprosy and venereal run in the family. Two of her own children are now lepers on Molokai.* Tongue badly cracked and fissured. Hopeless. Died 1886.

REBECCA.—Female,—her grandchild. Admitted March 9, 1883; aged 12; sick 6 years; is *the child of a leprous mother.* Apparently healthy until 6 years old. Had sores on the private parts, and nose suppurated. Bubos came and went. Had small-pox which caused loss of joint of fingers and pieces of bones of others, leaving the distorted, enlarged white-pink scars. At the present time there is a total loss of eyebrows, loss of soft palate; cannot speak loud; tubercles on lobes of ears and cheeks; end of nose sore; numerous scars on legs and knees; the skin of the leg is dark, dry, shining and cracked; tongue cracked. *Is the only child of her mother a long time after she had the leprosy.* Grandmother also leprous. Died 1886.

NULL.—Male; admitted March 9, 1883; aged 7; sick 1 year.

Contraction of the flexor tendon on left forearm. First joint of the thumb of the left hand enlarged. Skin of the forearm dark and rough, also on the entire body rough and covered with small spots like pins' heads, flat and glossy. The sites of former syphilides on post r. and l. prominent. Skin of legs, ankles and feet very dark, rough and scaly, more like a scurf. Right heel swollen, and ulcer, sunken and active on

inner side of the same below the ankle. Scar on the left side of the neck, irregular, long, a former deep ulcer; is brother of Kaiakea, and inherited syphilis from both parents. *Leprosy also seems to run in the family.*

KAIAKEA.—(Brother of the last case); admitted March 9, 1883; aged 11 years; 3 years sick.

Nearly total loss of eyebrows. Entire face tuberculous—more of a flush—still the thickness is very apparent. Fingers very tapering and tuberculous; very stupid, sunken verner, a rough looking eruption of skin on back like that seen in syphilitic ring worm, but this is more of a blotch of the entire back. The skin of the back and front of legs is dry, dark and furrowed. *An older brother was a leper on Molokai with contraction of flexor tendons, but became so well otherwise that he was discharged. Father and mother were both very badly syphilitic. March 31, 1883, transferred to Molokai. Died April 11, 1886. "A very advanced case of tubercular leprosy and died of dysentery."*

PUAHILANI.—Admitted March 9, 1883; age 54; sick 12 years.

Total loss of eyebrows. Has lost every toe, but the stumps have healed up at present. Loss of first joints of fingers on first, second and fourth on both hands and parts of bones from sides of others now healed with white scars. Face completely anæsthetic and greater portion of body. Skin of legs and form very black and dry, and epidermis furrowed. Tongue badly fissured. *His wife was a leper and died on Molokai 13 years ago. Sent to Molokai March 31, 1883.*

PANIKI.—Male; admitted February 19, 1883.

Anæsthesia, paralysis, atrophy of lower eyelids, left more affected; lost portion of bones from left thumb. Treat while here with Hyd. Bichlor. He says his trouble was caused by swearing an oath with his sweetheart of eternal constancy which she violated and *the Gods were angry.* She died but he escaped with a crooked mouth.

HOOMANANANUL.—Female ; admitted March 9, 1883 ; aged 14 ; sick 4 years.

Total loss of eyebrows ; lobes of ears enlarged and small tubercular syphilides ; fingers tapering and partial contracted flexor tendons of ditto. Left post cervical enlarged like a pea elongated ; long patch aesthesia on outer side of both forearms, skin dark and partially thickened ; skin of leg dark, shining, etc., anaesthesia on top of left foot ; large scars on knees. Has non-suppurative buboes frequently on left groin. Probably inherited them from her mother from her description, *but has resided with lepers.*

KIKILIA. Female ; admitted March 10, 1883 ; aged 34 years ; sick 6 months.

Tuberculous cheeks, partial loss of eyebrows ; lobe of left ear slightly affected, elongated. Partial paralysis of left side of face, sunken corner. "Her own mother has been to Molokoi as a leper." Tubercular face. Thinks she, however, did not show leprosy until after she was born. Circular ulcers on right leg below right knee, raised, greenish, rough, denoting second syphilis. Very hopeful case.

KALUNA.—Male ; aged 10 years ; sick 1 year ; mixed, bad.

August 15, 1882, his own mother was here ; obtained the following history from her : Kaluna was born May 23, 1871. The mother is a rather large sized, well made woman ; her tongue is fissured, broad and tooth-marked. Epitrochlear gland left arm marked, right cannot be found nor the post cervical glands. She has had five children, Kaluna was the third child ; all are living ; this one only shows leprosy. When he was two years old he was adopted by a sister of the husband where he lived until he was seven year old when he became covered with sores on privates and fundiment. Returned to mother who cured him by letting her spittle stand for some time on a piece of brass metal, then applying it to the sores. It caused a cessation of the pains and ultimately cured the disease

after she had tried many medicines. One year afterwards when a blotch (faded light) showed on right thigh and showed gradually on entire body during the next year when the cheeks became red, with no itching. After a few months tubercles began to form, slight at first and have increased since last January to their present stage. He was a very healthy child when young, skin fair, etc. The mother's mother soon after giving birth to the mother had a gripping pain in the breast which caused her to grow very poor and die from it when Kaluna's mother was young. The father of the mother lived to be quite old and was robust and healthy, dying a natural death. "Kaluna's father is a leper now on Molokai." His name is Kupele. He was taken last October, 1881, with the same form of leprosy. Soon after his marriage with Kaluna's mother he was much troubled with cold chills and great heat of the entire body for six months. This was before the birth of any of their children. This case continued until the first child was born, who died after the first month, when the father had cessation of chills for about a year when he had another spell which again left him after some months, but he had violent pains in the body and joints when the second child was born, a boy,—then a year afterwards, a girl, then this boy Kaluna, after which chills again came, more violent than before. He tried native medicines which proved beneficial for a time. When the child was three years old the father was taken insane for some months, violently so. Cured by kahunas. A year later he was sitting by the side of an open fire, not very close, without any covering for his legs when the heat caused large blisters to show on his right leg and ankle which ran into ulcers which they called leprosy. (It may have been anæsthetic before so that he did not feel the heat.) These ulcers, however, got well, but not readily. A few months afterwards small tubercles showed in skin of face below the eyes on the cheek bone, but these did not spread rapidly. He tried all the native remedies but they were no use.

Had a bad attack of dysentery which almost killed him but was cured by kahunas. Flush spread to face and gradually increased. For some months he tried many native doctors until all the money, pigs, chickens, awa, etc., was all gone, yet he got no better. He would get better, but exposure to sun, wind and water would bring it out again worse than ever; gradually increased became swollen, ran into sores, offensive discharge of pus. Native medicines improved that but the skin of the feet became very sensitive. Weak in legs, slightly swollen. Had no contraction of joints, but limbs and hands seemed wasted away. Kaluna, the son, was sent to Molokai August 21, 1882.

KAAIHOLEI.—Male; aged 10; sick 2 years; admitted January 30, 1882. Died October 30, 1882.

Chin one large tubercle, right and left cheek the same, the forehead slight ditto; ear enlarged three times the natural size with lobes one large tubercle four times the natural size; hands tubercular and swollen. Anæsthesia from elbow, fingers greatly enlarged and well marked taper. Front part of neck discolored, dark with ragged edges well defined; entire chest slightly the same. Eyes red and bloodshot, eyebrows partially disappeared. Scars one and a half inches in diameter on right and left elbow from former sores; circular patch morphea one inch on left shoulder blade, muscles of thighs and legs enlarged, feet and malleoli anæsthetic and swollen over twice the natural size, with the ankle not swollen but anæsthetic. Immense scars on knees and front of legs from former running sores; three sores on left leg partially scabbed over at present. Tongue thick, tooth-marked and fissured; slight sores in corner of mouth. Entire body and face resemble the ancient portraits of the "Satyrs." Weight 71 pounds. "Mother has leprosy," and is on Molokai. No neuralgia. Treatment Hospital mixture, No. 1 Ung. Hydrarg. Ammon. to face. Feb. 18th.—No change. March 9th.—Continue No. 1 Ung. Hydrarg. Ammon. General health better, no change to leprosy.

March 26. Continue treatment. Tubercles on cheeks greatly decreased in size and softer; on chin also slightly. No change of anæsthesia. General health not so strong.

April 20. Continue treatment. Great improvement as to tubercles of face. Chin about one-half of former former size and very soft. General health quite weak. Syr. Iod. Ferri. Small sore size of a quarter dollar, with a fungus like protruding core, opened on sole of left foot near big toe, quite painful; foot not badly swollen. Acid. Carb. dil: and Ung. Hydrarg. dil.

May 8. Continue treatment. Sore on foot increased, is quite week and languid. Ammon. Carb. Face improving wonderfully; hand about the same; anæsthesia on legs and feet the same. Sore on foot bleeds easily from around the core, blood black and thick. Appetite fair, complains of dizziness but no pains.

May 25. Continue treatment. Sore on foot improving slightly, core not protruding. Lobes of ears near natural size and wrinkled where the former tubercles were. The same on chin, nearly level with the skin. That heavy dull look gone. Quite lively but weak.

June 14. Bubo has appeared on left groin. Came to the size of a hen's egg, burst and discharging; swelling relieved by discharges, pain from the same slight. General health good but week. Sol. Syr. Iod. Ferri.

June 19. Swelling slight on bubo, the same healing, pain slight. Sore on foot tubercular and protruding; no discharge but does not heal. Chin has resumed its natural shape. Lobes of ears shrivelled. General health good but delicate. Continue Syr. Iod. Ferri.

July 9. Enjoys passably good general health, but not strong. Slight pains in right side. General pale look to face. Food seems to do him no good. Tinc. Clor. Ferri after meals.

July 13. Pains in side less. Is having a swelling of glands or bubo on left groin. Paint some with Morph. Sulp. and Tinc. Iod. comp.

July 15. Slight improvement. Pains in groins less;

Rested fair last night. "His own father, Naoho, is here." He is a thin man, 53 years old, well preserved for age, tongue thick, fissured in center, badly tooth-marked and fine red dots around edges, epitrochlear of left arm slightly enlarged; was married to present wife 29 years ago. Has had eight children; two, the third and fourth are dead, the first and last are alive. The patient, Kaaiholii is the seventh child. The father has had bubos on the right groin, did not burst, also gonorrhœa and stricture. Is not certain about chancres. Is much troubled with asthma which is most troublesome at evening. No appetite; stools as a rule are costive. Nocturnal neuralgia of joints. These symptoms were all prominent before the birth of this patient, who has developed what is known here as leprosy. The child was in perfect health until three years of age, when he was riding a horse with his brother, was thrown off and received injuries which run into small sores and became partially paralyzed, and leprosy showed but did not spread to any great extent until two years ago from exposure to cold, rain and sea bathing of which he which he was very fond and the symptoms increased very rapidly.

Grandfather on father's side was a tall, slim man. Did not appear to the children to be sick; died from accident. Grandmother was short, thick set in body. She was troubled with asthma until death. She had ten children. Eight--the first and last children are dead--two being born nearly the middle of the line of births are now alive, both troubled with asthma, pains in chest and myalgia of joints.

July 27. Mother of patient was here. Her name is Maleka. She is 40 years old and has been married over 20 years. Is rather tall, thin, high cheek bones, skin yellowish or sallow-looking, nose pitted, eyes dull, fingers long but nos tapering; tongue broad, cross-fissured and plainly tooth-marked; post cervical (posterior chain) left side enlarged. Epitrochlear on both arms, right more than left; has had buboes on right groin

burst before giving birth to children; has had a vaginal discharge with burning (gonorrhœa perhaps), was cured by a foreign doctor. Is troubled with a sort of asthma which began soon after giving birth to first child. Great intermittent pains in joints, knees, small of back, worse at night. Has always been very costive with no appetite whatever. Sometimes troubled with nausea. Her father was a very tall man; died of old age. Mother was short, fat and strong. She also died of old age. Thinks they never were sick, as father was a "big kahuna" (doctor and sorcerer). Kaaholii's brother, Poomaikai, younger and last born, age 8 years, has contractions of flexor tendons of fingers of left hand and enlargement of first joint of first finger bad, with absorbing nail. Post cervical (posterior chain) left side, much enlarged like a pea elongated. Tongue tooth-marked and broad. Has had scaly eruptions of head a few years ago. Has white faded spots scattered generally over body but no anæsthesia. General health good.

The mother of Kaaholii was one of seven children, the only one living. The rest all died young. She was the second born. The males died of asthma and general debility, the females came to Honolulu and became prostitutes and died from the effects of the life.

July 27. Discharge from groin smaller and swelling less; controlling pain with Sol. Magn. Very weak, but still eats. Give Ammon. Carb. as required, Continue Tinc. Chlor. Ferri after meals. Is growing very thin and slowly wasting away.

Aug. 18. Again improving slightly and gaining strength. Appetite good and sores on left groin slowly healing and discharge becoming less under Ung. Hydrarg. Dil. Continue Syr. Chlor. Ferri after meals and Sol. Magn as required.

Sept. 23. Keeps just about the same. Sore on right elbow will not scab over, looks like piece of raw ham in color. The same on groin and epigastrium, more healing. Good appetite, but the food seems to do him

no good. Is little more than skin and bone. Lips and eyes good color, the latter bright and glistening: cannot walk of himself, but can crawl like an infant on his hands and knees. Treatment, Acid, Nit. mv. before meals, and Tinc. Chlor. Ferri after.

Oct. 5. Testicles much swollen. Skin tight and glazed. Foreskin of penis also much swollen. Ulcer on thigh still keeps open with considerable discharge, while that on elbow of right arm is drying up. Is growing much stronger. Dr. Rodgers opened skin in several places by cutting epidermis with scissors, a watery and bloody discharge oozes slowly from the incisions.

Oct. 9. Openings in testicles, also increase in pain and swelling. Dr. Fitch again opened skin in five places, slightly relieved; ulcers will not close, deep, ragged edges, uneven flow on thigh, very offensive. Has gained a little strength. Good appetite. Apply Sol. Argent. Nit. on swollen testicles.

Oct. 11. Swelling of scrotum less. No discharge from the punctures in skin of same. Signs of approaching gangrene in same. Apply cloths with Dil. Acid. Carbol. on same. Complains of pains in left side and back. Give enough Sol. Magn. to keep easy.

Oct. 14. Slight gain. No change to ulcers, but swelling less. Signs of approaching gangrene less. Has good appetite. Sol. Magn. keeps him easy but he cannot last long.

Oct. 21. The end is coming fast, circulation of blood becoming feeble; pale look to his face. Stop Acid. Nit., use Sol. Magn. to ease him. Still quite strong; can sit up and eat his food with relish. Syr. Iod. Pot. with Carb. Ammon.

Oct. 22. Much the same. Continue treatment a little weaker. Stench from ulcers intense. Removed him from ward to morgue.

Oct 23. Continue treatment. Slowly growing more pallid, and weaker but eats well and talks more cheerfully.

Oct. 24, 9 A. M. Epigastrium much bloated and

swollen, with oppressed feeling. Still cheerful, poor boy, and asks for a cathartic, says he has been eating too much! Stop Iod. Pot. and give him castor oil.

Oct. 25. Cathartic has worked; slightly easier; puffy swelling extends to the thighs. Keep easy with Sol. Magn. Still relishes food, milk, crackers, etc.

Oct. 26. Slight change. Weaker. Give spirits of turpentine every four hours. Passes considerable putrid wind from epigastrium. Swelling slightly less, breathing becoming labored.

Oct. 27. Continue treatment. The candle is burning slowly out. Still perfectly conscious. No stools since yesterday; passes wind frequently and urinates freely, yellow, reddish, thick urine. Pulse slow and feeble. Too offensive to make many observations as to what, etc.

Oct 28. Still lives and this is about all; converses rationally, breathing labored. Takes a little milk; keep him quiet with Sol. Magn. No action of epigastrium. Itching of skin on breast and shoulders. More inclined to sleep from which he wakes up every few moments with a start.

Oct. 29. Last evening after the usual dose of Sol. Magn. to keep him easy, he turned on his right side; something he has not done for four months, and slept easy, when about 2 o'clock this morning he awoke, slightly delirious, with his mind wandering, talked of home and horse riding. Respiration spasmodic. Died easy between one of these spasms between 3 and 3:30 A. M.

KALUAHINE.—Female; aged 60 years; 10 years sick; admitted February 8, 1882; died April 10, 1883.

Partial absence of eyebrows. Right and left cheeks tubercular below the eyes; forehead the same. Anæsthetic, right and left forearms and hands, right and left legs and feet from the knees down; skin discolored, dark in small tubercular blotches, not raised but plainly on breast and epigastrium regions, intermixed with small circular light specks size of a small pea, like

morphæa alba, but not connected. Myalgia and osteo-copic pains severe, tongue broad, deeply fissured and tooth-marked. No appetite, restless at night. Stools very irregular and watery without griping. Lobe of left ear thickened slightly. Contraction flexor tendons of second, third and fourth fingers of the right hand; second slightly and increasing on third; nearly touching palm of the hand with fourth finger. Had bubos bad after being married, then after giving birth to a child had pox. Had running eruptions of the skin when young until 14 or 16 years old, was often troubled with griping pains when young, for a week or so at a time. "None of the family, or progenitors, have had leprosy, nor has she resided with it." Commenced by cold chills of the extremities and myalgia, caused by exposure. Her family being great fishermen she would go with them in the water, gathering moss, etc., from morning until night. Treatment Hospital mixture No. 1.

Feb. 26. Continue treatment; stools becoming more natural; appetite increasing. Can rest better at night. General health improving. Pains of legs and feet quite severe.

March 20. Continue No. 1. Pains in legs rather more violent. No change to hand or face. Increase Iod. Pot.

April 16. Pain legs improving. General health better. Considerable appetite. Rests very well at night. Anaesthesia slightly improved.

May 2. Continue treatment. Improving slowly. Tubercular formation on face decreasing in size, still prominent. General health very good.

May 31. Continue No. 1; add Iod. Pot. Anaesthesia of forearms and legs decidedly improved. Sensation in those places nearly as perfect as in other parts of body. Has a healthy look to face. Very slightly tubercular and eyes and lobe of left ear. Stools regular and healthy. Rests well at night. No myalgia or pains in body or joints. Hand about the same. Is in

in good health for an old woman, having been born during the reign of Kamehameha I. Gaining in flesh, weight 120 pounds.

July 22. Has been growing worse these few days. On investigation find she has not taken the medicines. Tubercles on third joints of the fingers worse and hot burning sensation. Paint with Sol. Argent. Nit. and increase Iod. Pot. General health passable.

July 31. Increase again; swelling improving.

August 15. General health, and puffy swelling on hands and face improved. Increase Iod. Pot. again.

Sept. 10. Continue treatment. Going down hill again. Nodes appearing on legs. Paint with Tinc. Iod. Comp. Complains of pains in bones; weak, no appetite. Remove to bad ward. Give Colombo and Amm. Carb.; also No. 15 as required.

April 2, 1883. Has kept on failing slowly. No hope till present time. Commences to have bloody stools. Very weak. Give Sulp. Morp. and Brom. Pot. as needed.

April 10, 7:30 P.M. Has been unconscious since 2 o'clock this afternoon; now ceased breathing. Will have post mortem in the morning.

Post Mortem, by Dr. G. L. Fitch.—Body well nourished; fat more than inch thick over abdominal wall. Thoracic cavity, right lung adherent over entire upper half, left lung slightly adherent at upper portion. Both lungs soft. Small crepitant. No disease apparent. Amount of serum in pericardial cavity; heart, normal in size but extremely fat; looked almost like a ball of butter; walls very thin and on section look as if composed of pure fat; only inner layer showing any muscular structure to the naked eye. Abdominal cavity, stomach and bowels normal. Liver enlarged and yellow; looks as if it were fatty. Spleen very small, but containing menstrual coagula. Mesentery thick and fat throughout. Twenty four hours after death.

MOKUNU.—Female; admitted December 26, 1882. Died July 3, 1883; aged 50 years; sick $1\frac{1}{2}$ years.

Partial loss of eyebrows on outer ends. Thick heavy tubercles, flat in the form of wrinkles on forehead, nostrils enlarged and tubercular giving nose a flattened appearance; breathing impeded, tongue clean, broad, pale, deeply fissured near tip. Post cervical (posterior chain) on right side enlarged; three glands distinguished like a chain, the one above the other, like elongated duck shot; the middle one most enlarged; epitrochlear not found; skin on forearm dry, loose epidermis well furrowed, having a white scurf in the furrows, withered or shrunken look to the same. Two ulcers, one on each side over inner portion of clavicle, below chin; the one on left side, protruding, size of a pigeon's egg, like the forming of an ulcer of the cellular tissue; that on right side has burst, since she has been under treatment by Dr. Fitch on Iod. Pot., emitting an intensely offensive discharge. It has gradually healed showing a drawn puckering scab like a star with its points. The one on the left side has shown but lately since the other began to heal. Body and legs remarkably free from scars for a native but has a dry parched look; feet same general look as forearms. Was married when about 30 years old. Had lived a very loose life up to that time after a native fashion. She formerly had a well rounded body, but after a four years' obstinate sickness of bloody dysentery became much shrunken. When she recovered from this she was seized with cold chills in the lower extremities, a continuous cold as if in the bones. This was worse towards night. After a month of these chills tubercular thickening showed on the face. No history of venereal disease, but she says she had many scaly eruptions on head and body when about seven years old. Appetite slight. Restless at night. Treatment, Iod. Pot. and Ammon. Carb., and Ung. Hydrarg. Ammon. Died, July 3, 1883.

Post Mortem by Dr. G. L. Fitch:

Body somewhat emaciated. Fat one-quarter of an inch thick over abdomen. Vessels of entire intestinal

canal filled full of dark fluid blood. Gut itself congested. An opening showed marked congestion of mucous membrane in both large and small bowels. Blood vessels of mesentery as large as crow quills and distended with both fluid and gaseous contents. Contained about one quart of glairy fluid. Walls most marked by congestion; looks as if blood were ready to burst out of the red punctuated points which dot its entire surface, but are most marked towards pyloric orifice. Bowels contain much green unhealthy fecal matter. Lower lobe of liver has a marked granular aspect. Kidneys normal except somewhat congested. Spleen normal. Ovaries only left T. C. Both lungs very adherent over anterior aspects, right most marked. Heart has considerable fat about it, and is enlarged apparently. Organs of chest distended with fluid blood more than usual. Cause of death, gastro-enteritis.

RECORD OF CASES AT MOLOKAI.

Dr. Mouritz furnishes the following notes in regard to several of the before mentioned cases.

LOHIAU.—Male; aged 50 years.

A case of anæsthetic leprosy, affecting the left hand only, producing the usual deformity caused by this form of leprosy, viz.: atrophy and palsy of the interossei muscles, gangrene of the distal phalanges and subsequent separation of necrosed parts, leaving stumps at times actively ulcerating, at times healed and sound.

This man is a fine powerful Hawaiian; had no illness of any serious nature, but slight attacks of bronchitis and diarrhœa, from which quickly recovered, neither of these serious enough to confine him to the house. His mutilated hand during the past 12 months was soundly

healed, and the disease (leprosy) showed no outward signs of activity. This was his condition when he was removed from the settlement in November, 1885, and as often as I had noticed him, when he applied to me for the relief of various trivial ailments. I was led to conclude that the disease in him was latent, and was likely to remain so for some years to come.

HEANU.—Female; aged 30 years; single; from Hilo.

A case of tubercular leprosy; advanced. During the past 18 months I have treated her for bronchitis, and general eczema. She recovered from the former, and the skin trouble is nearly cured.

Present condition: Makes no complaint of any kind, eats and sleeps well.

Eyebrows entirely extruded, lobes of ears very slightly enlarged with tubercles. Face, forehead and cheeks present evidences of tubercles, and general infiltration of leprous matter. Although this case is advanced there has been no suppuration of the tubercles or in any part of the body. The most ominous sign is the "muddy pallor of the face," which I now interpret as the forerunner of diarrhoea (and rapid exhaustion) and leprous fever, which will probably be fatal.

KAHANAAUPUNI.—Female; aged 26 years; single; from Hilo. A case of mixed leprosy. I have treated her for fever of the usual recurrent type peculiar to leprosy. Bubo in the right groin, plantar ulcer over the bases of the fourth and fifth metatarsal bones of the right foot.

Present condition: Now enjoys good health; devoid of pain, eats and sleeps well. Eyebrows slightly diminished; ears unaffected; slight infiltration of cheeks, but not causing any disfigurement, with the sole exception of the ulcer on the plantar surface of right foot, (which is now active). This woman has no suppurating surface on the body, and the disease in her made, and is making very slow progress.

KAKE.—Female; aged 46 years; mother of the preceding woman (Kahanaaupuni); from Hilo; an advanced case of tubercular leprosy.

I have treated her for bronchitis, diarrhœa, ozena, glossitis, gengivitis, thrombosis of the femoral vein. She has now kept free from any fresh trouble for four months, and has left off all medical treatment for the present.

Present condition: Face, cheeks and forehead, infiltrated, and covered with leprous tubercles (size of a hen's egg), none suppurating; eyebrows gone; ears moderately enlarged; no sores on body. Her nose is much enlarged, the alæ bulging out, and her chief trouble is ozena due to the presence of dead bone in the nasal fossa.

KEAKA PAAKAULA.—Male; aged 30 years; from Hilo. Transferred March 31, 1883. A case of tubercular leprosy. Enjoys good health, and has had no illness since his residence here.

Present condition: Advanced. Eyebrows gone; face, cheek and forehead, shows the remains of past tubercles, now destroyed by ulceration, but leaving seams and cicatrices on the skin. The alæ of nose are covered with a mass of conglomerated ulcerating tubercles; ears are lobed excessively. The fingers are enlarged, fissured and present raw surfaces. Plantar ulcers are present on both feet.

PAPOMAIKAI.—Male; aged 31 years; from Waihee. Case of mixed leprosy. Has had good health here since he was transferred March 31, 1883. I have treated him successfully for a large callous ulcer on the outer surface of right leg extending from the ankle to near the apex of the tibia.

Present condition: Voice hoarse and stridulous; nasal bones sunken; ears normal; eyebrows much thinned; alæ of nose destroyed; fingers of both hands, the terminal phalanges are destroyed, the stumps being strongly flexed on the palm. At the base of the metatarsal bone of right foot is a large ulcer.

PUUPU.—Female; aged 48 years; from Waihee; transferred with her husband (now dead) March 31,

1883. A case of anæsthetic leprosy. Is in good health, and has had no illness all her life except leprosy, which causes her no inconvenience.

Present condition: Face and body clean and healthy. Finger mutilated on both hands, and plantar ulcers on both feet, varying in site, at times healed, at times open, but of small size, and causing her no discomfort.

KAPHONO.—Male; aged 43 years; from Wailuku; transferred from Kakaako, March 31, 1883. A case of mixed leprosy moderately advanced. Has enjoyed good health, and has had no complications of leprosy requiring treatment except ulcers of the feet.

Present condition: Eyebrows destroyed; ears normal; cheeks and forehead infiltrated with leprosy matter; no tubercles. The toes of both feet are mutilated, some entirely destroyed. The interossei muscles of hands are atrophied but not paralyzed.

KAILI.—Male; 16 years of age; from Kau. A case of mixed leprosy. Has not had any treatment.

His present condition: Feels well, no pain, takes his food; case is moderately advanced. The face is generally infiltrated, no tubercles; the right hand is mutilated, many of the phalanges of the second, third and fourth fingers being destroyed and the stumps strongly flexed on the palm, the other fingers are covered with suppurating ulcers, some deep, some superficial. Both feet are affected with plantar ulcers.

KALUNA.—Male; aged 14 years; from Haiku; transferred August 21, 1882. A case of tubercular leprosy, advanced. Since he has resided here he has had no illness to confine him to the house; has had no treatment from me.

Present condition: Eyebrows lost; ears much enlarged and disfigured with tubercles, and this is also the condition of his cheeks and forehead, which latter show traces of past extensive ulceration, being corrugated, warty and seamed. The chin is now the seat of extensive leprosy infiltration, as yet devoid of ulceration.

The nasal bones are destroyed, and the cartilages of the alæ.

STEPHEN KIWAA.—Male; aged 27 years; from Ulapalakua; a case of mixed leprosy, but he has not had any medical treatment. He states he is quite free from pain, his appetite is good and were it not for his feet he would be quite as well as ever he was.

Present condition: Left eye destroyed, the right is much affected with pterygium. Tubercles are present on face and cheeks, not on forehead; ears present slight traces, the lobes being more pendulous than natural; both hands present past traces of the ravages of leprosy; the fingers are shortened, distorted and almost useless; both feet are affected with ulcers, the right has the peculiar excavating ulcer in the heel, almost diagnostic of leprosy; the left foot, the ulcers are situated over the bases of the metatarsal bones, some over the heads of the first phalanges.

KALIKO.—Female; aged 36 years; from Makawao. (Has a daughter here, Kekai, 17 years old, almost her facsimile in disease). A case of anæsthetic leprosy. Has not made any complaint of illness and says on interrogation she has no special ache or inconvenience. Both hands are much mutilated by past ravages of the disease, but no wounds are present, the stumps being soundly healed. One ulcer is situated on the plantar surface of heel.

PUAHULANI.—Male; aged 57 years; from Ukamehame; a case of mixed leprosy. I have treated him for bronchitis and aching osteal pains; he is now free from both these troubles, and gets about quite comfortably.

Present condition: Eyebrows gone; ears present traces of old ulceration; the bridge of nose is sunken, and the alæ are also destroyed; voice hoarse and stridulous; feet and hands much affected with the disease, the fingers and toes having almost totally disappeared, leaving the stumps of metacarpal and metatarsal bones respectively.

ACT OF 1870, CHAPTER XVI, RELATING TO DIVORCE.

SECTION 1. Divorces from the bond of matrimony shall be granted for the causes hereinafter set forth, and no other.

First. * * * “And when it is shown to the satisfaction of the Court that either party has contracted the disease known as Chinese leprosy, and is incapable of cure.”

RULES OF THE BRANCH HOSPITAL, KAKAĀKO.

1. The Hospital is under the general superintendence of the Mother Superior of the Order of Franciscan Sisters.

2. No visitors except Their Majesties, the King and Queen, His Majesty's Ministers, Members of the Board of Health, and the Physicians of the Hospital, will be permitted to visit patients without a written permission from the President of the Board of Health.

3. Friends of patients not confined to their rooms will be allowed to visit them at the gate house every day, between the hours of 8 A. M. and 6 P. M.

4. All lights must be extinguished in the Hospital premises at 9 P. M., unless otherwise ordered on account of sickness.

5. No articles of food as gifts to patients, from friends outside will be allowed except by permission of the Superintendent.

6. It is forbidden to introduce into the Hospital premises articles of food or drinkables of any kind for sale.

7. All food for patients must be cooked at the Hospital kitchen, by the appointed cook.

8. Articles of food must not be carried from the refectory to the sleeping rooms.

9. All patients must go to the refectory for their meals, unless excused on account of ill health.

10. All games of chance for money are strictly forbidden within the Hospital premises.

11. Patients must not indulge in profane, or indecent language or songs.

12. It is strictly forbidden to patients, for men to visit the women's departments, and women that of men.

A strict accountability will be held for any violation of the above rules.

By order of the Board of Health.

WALTER M. GIBSON,

President of the Board of Health.

APPROPRIATION FOR LEPERS.

[Editorial P. C. Advertiser, July 13, 1878]

The popular sentiment among Hawaiians been somewhat averse to the segregation of their afflicted countrymen at Kalawao, Molokai. At the commencement of the present session of the Legislature it was feared by some in the foreign community that a majority of the native members would vote against any supplies for the support of the leper settlement; but we are gratified to record that the former liberal appropriation has been exceeded by an addition of ten thousand dollars, and moreover, native members readily voted another ten thousand dollars in order to secure the services of a first-class superintendent for the settlement, who should be a physician of repute, during the next bi-ennial period. The chief opposition to this especial appropriation came from a foreigner. After such evidence of liberal provision for the sick of Hawaii, in accordance with the most enlightened treatment and management, we trust that the voices of the sneerers at Hawaiians,—who say that they are without thought or reason in the consideration of a great evil, and would be willing to ruin or injure the nation by a return of the lepers to their homes,—will now be silenced. As remarked by the Hon. Mr. Gibson, this liberal provision of the Legislature, so largely composed of native Hawaiians, redounds to the honour of this country. And as we believe in giving honour to whom it is rightly due, we have no hesitation in saying what we know to be a fact, that it is largely due to the influence exercised upon the native members by Mr. Gibson that this liberal appropriation was carried. The following is an abstract of the remarks of that gentleman in proposing an increased appropriation for the leper settlement:

“MR. PRESIDENT:—The provision made by the Assembly of 1876 for our unfortunate lepers was large and redounds to the honor of this country, considering the smallness of our country and our resources.

But I propose that we should do still more. Enough is provided for food, clothing and lodging, if properly administered: but there are certain things essential to the comfort of the sick, for which some additional means should be voted. The leper has no light in his hut, unless he is enabled to buy oil with his own means. Many have no means to buy, and must pass weary hours in darkness. It would be a heavy item of expense to supply every one of a community of 700 with a ration of oil—say one quart a week, but if this quantity be supplied to a group of seven, or say to each house or hut per week, we need not add more than \$1,200 to the appropriation for this item. Next comes soap, which would be a very heavy item if fully supplied: but we ought to provide for at least one bar of soap per month for each leper, which will be but a scant supply for cleanliness, and this addition will require \$2,000 more. The beef rations of 6 pounds a week is considered too small, but I think if the poor leper gets his full ration of 21 pounds of taro he will not suffer with 6 pounds of beef. However, we might add 1 pound of beef which at 4 cents a pound, the lowest estimate, would require us to vote \$3,000 more. Now, if we provide for salt, some utensils, and an increased supply of medicines, lint and disinfectants, we may probably add enough to require a full \$10,000 more to be added to the appropriation as called for in the bill. We must vote for this, if we have to let other things stand still. How can we vote for any measures for public improvements and neglect our unhappy lepers? Their last cry to me and to the members of the Special Committee as we passed from them at Kalaupapa was, Do not forget us! And we will not and cannot forget them.”

The proposed increase making the amount \$6,500 was promptly voted by the Assembly. The honorable member then proposed an additional item of \$10,000 to provide for the pay of a superintendent at Kalawao. He said:

“He wanted to provide for the services of a man very difficult perhaps to find. The man needed now at Kalawao should have first-rate executive ability and be a physician of repute. He should moreover be a man of great heart, an enthusiast in the cause of humanity, and one anxious to win a noble name as a benefactor of suffering humanity. Many say it is hopeless to find such a man: but let us provide liberally.—let us put the means into the hands of the Government. Let us acquit our hearts in this matter, and it may be that a brave, generous and enlightened soul shall come forward from among the many self-sacrificing worthies that this world produces from time to time, and we shall find the man that our great calamity calls for. He should be chief of a medical staff that had full charge of the lepers of the Kingdom. Such a man is the crying need of the leper settlement at Kalawao. The lepers all said, Send us a physi-

cian, we live now without hope; a physician would give us some hope. And even if we believed all their cases incurable, shall we deny them the consolation which all crave, when suffering, to listen to words from skilled lips that revive our hope of life?"

After slight opposition this item was voted by a large majority.

[Extracts from the writings of Walter M. Gibson, published in the "Nuhou," Honolulu, II. I., 1873-1874.]

THE LEPERS AND THEIR HOME ON MOLOKAI.

Leprosy is a word of dread. Some men would slay themselves rather than live lepers. It has always been the fearful scourge of Asia, and of the brown races more than of the white. It has become the terror of this Archipelago, but is not yet known in other groups of the Pacific. How it came here we cannot tell, although it is called by natives the *Mai Pake*, or Chinese disease. But everything the natives don't know anything about, they designate as of Chinese origin. (Lettuce is called by the natives, *Kakipi Pake*, Chinese cabbage).

It is spreading rapidly. There are 438 confirmed lepers in Kalaupapa, and nearly as many more throughout the Islands with manifest symptoms of the disease. The chief cause of its increase lies in the native apathy. The healthy associate carelessly with the bloated, hook-fingered victims. The most awful conditions of the disease neither scare nor disgust, and the glistening, distorted face is rubbed against as complacently as the most healthy countenance. The horror of this living death has no terror for Hawaiians, and therefore they have need more than any other people of a coercive segregation of those having contagious diseases.

Some people consider this enforced isolation as a violence to personal rights. It is so, no doubt, but a vio-

lence in behalf of human welfare. It is a violence to remove a small-pox patient to a pest house, and we would not have such an one restored to friends till well. And so with the leper, he will be restored if cured. But if he continually carries with him the seeds of death, he must not be allowed to destroy his brothers and sisters. He must be kept apart from his fellows. It is done in enlightened Europe as well as in Asia; and no where is the sad necessity enforced more humanely than in the Hawaiian Islands. * * * *March 14, 1873.*

GONE TO VISIT THE LEPERS.

Mr. S. G. Wilder and Mr. Moanauli went to Molokai per *Kilauea* yesterday afternoon, to visit the leper settlement at Kalaupapa. The large number of people, mostly males, now residing in the settlement, will need much attention and some special organization. If it was an assemblage of Americans or Europeans in such a horrible hopeless condition, they would need strict confinement and some military force to prevent their doing acts of frenzy. Alas, we dare not think what we might be or do, if we were a confirmed leper, sure to rot daily unto death. And these Hawaiian lepers though so docile and law-abiding like all their race, may break out in their agony and despair some day, if not well cared for. They will need much attention and it will have a salutary effect upon the people to know that their diseased brethren are cared for with a parental solicitude. We ought to expect the best of results from Mr. Wilder's energy and administrative ability.—*April 22, 1873.*

A ROYAL VISIT TO THE LEPERS.

This we respectfully suggest. The presence of His Majesty at Kalaupapa would have a most inspiring effect upon his unhappy subjects, who are necessarily exiled; and also upon all others throughout the Kingdom, on observing this evidence of a paternal care for the saddest and most hapless outcasts of the land. There is no fear of contagion in merely looking at this dread disease, therefore we respectfully suggest to His Majesty to visit Molokai. And if a noble Christian priest, preacher or Sister should be inspired to go and sacrifice a life to console these poor wretches, that would be a royal soul to shine forever on a throne reared by human love.—*April 15, 1873.*

A CHRISTIAN HERO.

We have often said, that the poor outcast lepers of Molokai, without pastor or physician afforded an opportunity for the exercise of a noble Christian heroism, and we are happy to say that the hero has been found. When the *Kilauea* touched at Kalawao last Saturday, Monseigneur Maigret and Father Damien, a Belgian priest, went ashore. The venerable Bishop addressed the lepers with many comforting words, and introduced to them the good father, who had volunteered to live with them and for them. Father Damien formed this resolution at the time, and was left ashore among the lepers without a home or a change of clothing except such as the lepers had to offer. We care not what this man's theology may be, he is surely a Christian Hero.—*May 13, 1873.*

LETTER OF HIS MAJESTY TO THE LEPERS.

HONOLULU, April 20, 1873.

To my Friends at Kalaupapa :

By the hands of two members of the Board of Health I send you these words. You all know that on account of the prevalence of this disease of leprosy in the nation, a division of land has been set apart for the isolation of those affected. This measure has been for the good of the nation, and being a law, it must be executed. But it is indeed a sad thing to be thus separated from friends and loved ones ; how else, however, are the laws to be executed?

I can only say to you that you shall receive all the benefits that the Government can possibly bestow, and I trust that, in consultation with my advisers, everything will be done for you, consistent with a regard for the good of the whole people. May the Almighty Father watch over, protect and bless you, is the prayer of him whom the nation has chosen as its earthly Lord.

God preserve Hawaii Nei.

Love to you all,

LUNALILO.

We hope His Majesty will remember the good priest who has gone voluntarily to minister unto His Majesty's afflicted people on Molokai. If this is not a "faithful minister of the Gospel," we don't think he is to be found in these Islands.—*May 16, 1873.*

INDEX TO SUPPLEMENT.

	PAGE.
Organization of Board of Health, 1850.....	3
Report of Dr. Hillebrand, 1863.....	4
Chinese Leprosy, P. C. Advertiser, 1864.....	6
Leprosy Act of 1865.....	8
Amendments thereto.....	158, 160 184
Hawaiian Gazette on Leprosy, 1855.....	12
Dr. D. Baldwin on Leprosy, 1865.....	15
Dr. Hillebrand's Hong Kong Report, 1865.....	23
Purchase of Kalaupapa, Molokai, 1865.....	27
Establishment of Kalihikai, 1865.....	29
Dr. Hoffman's Report, 1866.....	34
Report of the Board of Health, 1866.....	36
“ “ “ “ 1868.....	43
“ “ “ “ 1870.....	50
“ “ “ “ 1872.....	57
“ “ “ “ 1874.....	69
“ “ “ “ 1876.....	77
“ “ “ “ 1878.....	79
“ “ “ “ 1880.....	92
“ “ “ “ 1882.....	113
“ “ “ “ 1884.....	130
Report of Dr. Trousseau, 1873.....	65
“ Hawaiian Evangelical Association.....	75
“ Special Sanitary Committee, 1878.....	80
“ Dr. Emerson, 1880.....	92
“ Dr. Neilson.....	107
“ Dr. Fitch, 1882.....	117
Cases Recorded at Kakaako.....	161
Rules at the Branch Hospital.....	184
Appropriation for Lepers, 1878.....	186
Nxtracts from “ Nuhou,” 1873.....	188